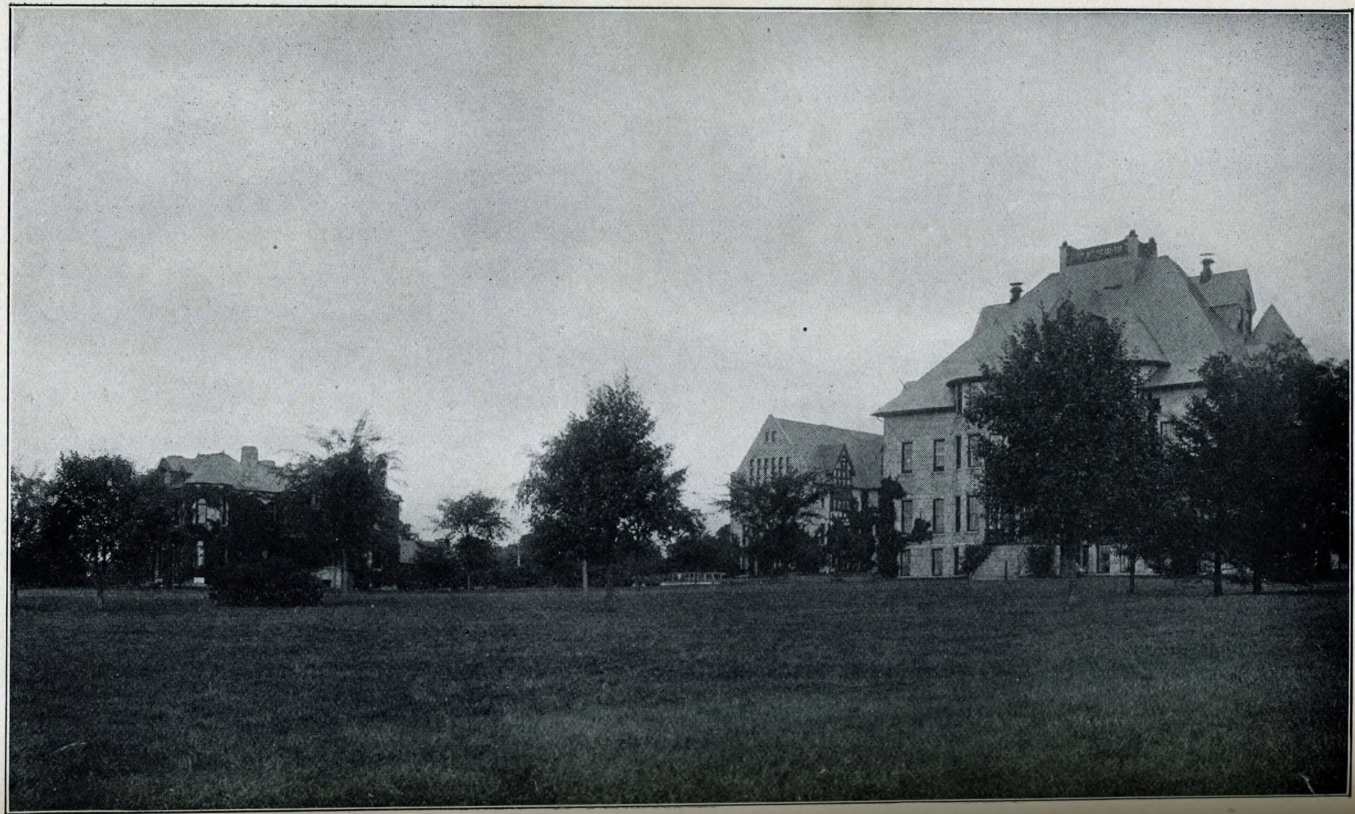

EXPERIMENT STATION. LIPPITT HALL. DAVIS HALL.

TWENTY-FIRST ANNUAL REPORT

OF THE

Corporation, Board of Managers

OF

RHODE ISLAND STATE COLLEGE,

MADE TO THE

General Assembly at its January Session, 1909.

PART III—CATALOGUE.

Part I—General Report—is printed under separate cover.

Part II—Experiment-Station Report—is printed under separate cover.

Providence, R. I.
E. L. Freeman Company, State Printers.
1909.

Rhode Island State College.

Corporation.

HON. ROBERT S. BURLINGAME	NEWPORT COUNTY.
*HON. C. H. COGGESHALL	BRISTOL COUNTY.
†HON. CHARLES ESTES	BRISTOL COUNTY.
HON. CHARLES DEAN KIMBALL	PROVIDENCE COUNTY.
HON. THOMAS G. MATHEWSON	KENT COUNTY.
HON. J. V. B. WATSON	WASHINGTON COUNTY.
HON. WALTER E. RANGER	STATE COMMISSIONER OF SCHOOLS, *ex officio*.
‡—— ———— —————	MEMBER OF STATE BOARD OF AGRICULTURE.

Officers of the Corporation.

HON. CHAS. DEAN KIMBALL, President	P. O., PROVIDENCE, R. I.
HON. ROBERT S. BURLINGAME, Clerk	P. O., NEWPORT, R. I.
HON. ROBERT S. BURLINGAME, Treasurer	P. O., NEWPORT, R. I.

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*Term expired January 31, 1909.

†Appointed February 1, 1909.

‡To be elected by the Board of Agriculture.

Report.

To His Excellency Aram J. Pothier, Governor, and the Honorable General Assembly of the State of Rhode Island and Providence Plantations, at its January Session, 1909:

I have the honor to submit herewith Part Three of the Twenty-First Annual Report of the Board of Managers of Rhode Island State College, as required by law.

CHARLES DEAN KIMBALL,

President of the Board of Managers of the Rhode Island State College.

Faculty and Other Officers.

HOWARD EDWARDS, A. M., LL. D.,

PRESIDENT,

Professor of Political Economy and Social Science.

HOMER JAY WHEELER, PH. D.,

Professor of Geology.

E. JOSEPHINE WATSON, A. M.,

Professor of Languages.

HARRIET LATHROP MERROW, A. M.,

Professor of Botany and Secretary of the Faculty.

VIRGIL LOUIS LEIGHTON, PH. D.,

Professor of Chemistry.

JOHN BARLOW, A. M.,

Professor of Zoölogy.

GILBERT TOLMAN, A. M.,

Professor of Physics and Electrical Engineering.

MARSHALL HENRY TYLER, B. S.,

Professor of Mathematics.

GEORGE EDWARD ADAMS, B. S.,

Chief of Department of Agriculture and Professor of Agronomy.

ANDREW EDWARD STENE, M. S.,

Superintendent of College Extension.

SAMUEL HARVEY WEBSTER, B. S.,

Professor of Civil Engineering.

WARREN BROWN MADISON, B. S.,*

Professor of Animal Husbandry.

ROYAL LINFIELD WALES, B. S.,

Professor of Mechanical Engineering.

HENRY GILMORE STAHL,

First Lieutenant Sixth Infantry, United States Army,

Professor of Military Science and Tactics.

BURT LAWS HARTWELL, PH. D.,

Professor of Agricultural Chemistry.

ALICE MARIE LOOMIS, B. S.,

Acting Professor of Home Economics.

EDGAR ALLEN BISHOP, B. S.,

Acting Professor of Animal Husbandry.

THOMAS CARROLL RODMAN,

Instructor in Woodwork.

MABEL DEWITT ELDRED, B. S.,

Instructor in Drawing.

HOWLAND BURDICK, B. S.,

Instructor in Dairying.

LILLIAN MABELLE GEORGE, A. B.,

Librarian.

WALTER SHELDON RODMAN, M. S.,†

Instructor in Physics and Electrical Engineering.

JOSEPHINE OSBORNE BOSTWICK, A. B.,‡

Instructor in Languages and History.

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*Died March 22, 1909.
†Leave of absence.
‡Resigned, December, 1908.

WILLIAM SAWYER SPENCER, B. D.,

Instructor in English.

DANIEL JOSEPH LAMBERT,

Instructor in Poultry Keeping.

ERNEST KENSEY THOMAS,

Instructor in Horticulture.

JOHN RALEIGH ELDRED, B. S.,

Instructor in Mechanical Engineering.

JACOB ALGER FOTTLER, B. S.,

Instructor in Physics and Electrical Engineering.

FRANCIS HERVEY SMITH, M. S.,

Instructor in Chemistry.

FLORENCE H. MYRICK, B. S.,

Instructor in Languages.

EMILE ARTHUR MALLETTE,

Florist.

LUCY COMINS TUCKER,

Head Clerk and Secretary to the President.

LILLIAN EDNA TOLMAN,

Bursar.

JENNIE ELIZABETH FRANCIS,

Bookkeeper.

Lecturers.

Poultry Course.

E. C. Tefft, Wakefield, R. I., POULTRY HOUSES AND POULTRY PLANTS. POULTRY AND FRUIT. Two lectures.

Prof. John Evans, Cranston, R. I., MAKING NEW BREEDS. CARE OF POULTRY. Two lectures.

Henry D. Smith, Rockland, Mass., THE PRODUCTION OF SOFT ROASTERS. DEMONSTRATION IN CAPONIZING. Three lectures.

C. N. Gallup, Brooklyn, Conn., DEVELOPING A MEAT TYPE. One lecture.

W. H. Card, Manchester, Conn., STANDARD POULTRY. CHALK TALKS. Six lectures.

Geo. A. Cosgrove, Willington, Conn., STARTING A POULTRY PLANT. EXPERIENCES WITH POULTRY. Three lectures.

J. Alonzo Jocoy, Wakefield, R. I., ARTIFICIAL INCUBATION AND BROODING. Two lectures.

Ernest L. Winslow, Apponaug, R. I., PIGEONS AND SQUABS. Two lectures.

Prof. F. H. Stoneburn, Storrs, Conn., PRESERVATION OF EGGS. BROODING AND FEEDING CHICKENS. Two lectures.

Harmon S. Babcock, East Providence, R. I., ORIGIN OF THE DOMESTIC FOWL.

Prof. C. A. Rogers, Ithaca, N. Y., POULTRY HOUSE CONSTRUCTION. (Illustrated.) EXPERIMENTS WITH EGGS. Two lectures.

Wm. F. Kirkpatrick, Experiment Station, Kingston, EXPERIMENTS WITH TURKEYS AND PIGEONS. Two lectures.

Roy H. Waite, Experiment Station, Kingston, R. I., POULTRY WORK AT THE MICHIGAN AGRICULTURAL COLLEGE.

EXPERIMENT STATION.

Experiment-Station Council.

Howard Edwards, M. A., LL. D.	President of the College. *Ex-officio* Member.
H. J. Wheeler, Ph. D.	Director, Agronomy.
Burt L. Hartwell, Ph. D*	Chemistry.
Philip B. Hadley, Ph. D	Biology.
George E. Adams, B. S.	Horticulture.
W. F. Kirkpatrick, B. Agr., B. E.	*Assistant, Biology.*
P. H. Wessels, B. S.	Assistant, Chemistry.
F. R. Pember, M. S.	Assistant, Plant Physiology.
S. C. Damon, B. S.	Assistant, Agronomy.

Other Members of the Station Staff.

J. Frank Morgan, M. A.	Assistant, Chemistry.
L. F. Whipple,	Assistant, Chemistry.
Wilhelm B. Quantz, Ph. D	Assistant, Chemistry.
E. A. Mallette	Assistant, Floriculture.
Albert L. Whiting, B. S.	Assistant, Agronomy.
Roy H. Waite, B. S	Assistant, Biology.
Nathaniel Helme	Meteorology.
Grace E. Hovey, B. S.	Stenographer and Accountant.
E. Elizabeth Meears	Stenographer and Librarian.
Zilla M. Constable, B. S.	Stenographer and Clerk.

The publications of the station will be mailed free, upon request, to all residents of Rhode Island to whom they are of interest. Suggestions as to how the station can aid the state are gladly received. Visitors are always welcome. Railway station, telegraph, express, and post-office—Kingston, Rhode Island. Long-distance telephone, Narragansett Pier Exchange.

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*In charge of experiments in plant physiology and animal feeding.

CALENDAR.

1909.

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1910.

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College Calendar.

Friday, June 18, 1909	Entrance Examinations, 9 A. M.
Tuesday, September 14	Chapel Exercises, 8:15 A. M.
Registration, examination of entering and conditioned students, 9 A. M.	
Wednesday, September 15	Recitations begin, 8:35 A. M.
Tuesday, November 2	Election Day.
Thursday, November 25	Thanksgiving Day.
Wednesday, December 22, 4:15 P. M. Tuesday, January 4, 1910, 8:15 A. M.	Christmas Recess.
Friday, January 28, 12 M.	First Term ends.
Wednesday, February 2	Entrance Examinations, 9 A. M.
Thursday, February 3	Second Term begins, 8:15 A. M.
Registration, 9 A. M. Recitations begin, 1:30 P. M.	
Sunday, February 13	Day of Prayer for Colleges.
Tuesday, February 22	Washington's Birthday.
Friday, May 13	Arbor Day.
Monday, May 30	Memorial Day.
Sunday, June 5	Baccalaureate Address.
Wednesday, June 8	Class Day Exercises.
Thursday, June 9	Commencement Exercises.
Friday, June 10	Entrance Examinations, 9 A. M.

Rhode Island State College.

Foundation.

The college is one of the so-called land-grant colleges. As such, its object is to "teach such branches of learning as are related to agriculture and the mechanic arts . . . in order to promote the liberal and practical education of the industrial classes in the several pursuits and professions of life." Further than this, it has a well-defined investigative purpose in its experiment station, organized as a department of the college and endowed by the general government.

The resources of the college are as follows:

(1) The interest on $50,000, which was the net amount received by the state from the sale of its scrip for 120,000 acres of land, granted by the general government in 1862. This fund came to the college in 1894.

(2) The annual appropriation of $15,000 from the general government, under what is known as the Hatch Act of 1887. This fund is exclusively for experimental purposes.

(3) The annual appropriation of $25,000 from the general government under the second Morrill Act of 1890. This fund is for teaching the subjects distinctly named and specified in the act, as follows: "to be applied only to instruction in agriculture, the mechanic arts, the English language, and the various branches of mathematical, physical, natural and economic science, with special reference to their applications in the industries of life, and to the facilities for such instruction."

(4) The funds coming from the general government to the state under the Adams Act of 1906, yielding $7,000 in 1906, and increasing each year by $2,000, until the whole shall amount, in 1910, to $15,000. This fund is exclusively for experimental purposes.

(5) The funds from the general government under the Nelson Amendment of 1907, amounting on July 1, 1907, to $5,000, and increasing yearly thereafter by $5,000 until the whole, in 1911, will amount to $25,000. This amendment is simply an extension of the 1890 Morrill grant and carries the same restrictions.

(6) The annual maintenance fund from the state of $25,000, used for all the purposes for which the funds of the general government can not be used: *e. g.*, for extension work; for executive and administrative work; for heating, lighting and maintenance of buildings; for the teaching of modern languages other than English, of history and civics; for student labor, maintenance of grounds, roads, etc.

The college was founded in 1888 as an agricultural school. In 1892 it was incorporated as a college. The courses of study have been on a college basis since 1892; the requirements for a degree were raised in 1898; and the curriculum was again thoroughly revised during the years 1906–07 and 1907–08. The course in home economics for young women was introduced in 1908.

Object and Organization.

The function of the Rhode Island State College is to aid in fostering the industrial life of the state, at least in so far as pertains to agriculture, manufactures, transportation, and home-making. This it does in three ways: 1. By the investigation and discovery of new truth, more or less directly applicable in the industries. 2. By the direct distribution of industrial information to the people. 3. By the organization and administration of definite courses of instruction designed to fit young men and young women for effective work in the industrial pursuits.

The first of these duties is performed by the

Experiment Station

for a description of the work of which the reader is referred to the report of the director, constituting Part II of the Report of the Board of Managers for the current year. A statement of its staff organization may be found on page 9 of this catalogue.

The experiment station takes part, also, in the second phase of the college activities, by distributing its bulletins to all that desire and apply for them. In order, however, more fully and directly to bring the college and its work into touch with the people, a

College Extension Department

has been organized, and is in active operation.

The purpose of this department is to carry the instruction of the college to those who can not come to it for study. Whenever necessary and possible, visits will be made to any part of the state to examine farms, orchards, and gardens; to identify injurious insects or plant diseases, or give instruction in regard to methods of treatment; or to examine soils with a view to suggesting remedies for lack of fertility. General plans for laying out farms and for carrying out the details of any farm operations will be given the fullest consideration. The college is open for consultation at any time in regard to any problem of the farm, garden, or orchard. The fullest correspondence is invited, and conscientious consideration will be given to every letter received.

Whenever possible, arrangements will be made for lectures or demonstrations by members of the college faculty or experiment-station staff when called for at any agricultural meeting or neighborhood gathering. Coöperative experiments will be arranged to help the farmer solve the problems which are peculiar to his own farm or his portion of the state, and for the purpose of teaching some of the principles which have been worked out at the experiment stations of this and other states. As part of the work for the present season, such experiments will be outlined along the following lines: 1. Remedies for the San José scale and other injurious insects and plant diseases. 2. Treatment of greenhouse insects with hydrocyanic-acid gas.

From time to time, as funds will permit, special lecturers will be engaged to address granges, horticultural societies, and other organizations interested in agriculture, on various timely topics. Such lectures will generally be given free of charge. Members of the faculty have prepared lectures on various subjects which they are ready to deliver at any place in the state. These lectures are free, the only charge being the traveling expenses of the speaker.

An important part of this extension work is to be the encouragement of home study and the conducting of correspondence courses. For the present, time and funds will not permit the carrying out of this plan, but advice will be given to any person wishing to take up home study regarding courses of reading, books, and other literature which may be necessary in connection with such work.

Another important phase of nature study, which aims to interest the young people of the schools in things of nature and of the farm, is

The Nature Guard.

The Nature Guard is an organization of young people formed for the purpose of awakening in its members a livelier interest in the things of outdoor life. Its object is to stimulate the power of observation and to lay the foundation for a simple, rational education, which shall give the individual a love for nature and a sympathy with his environment, and furnish him with the means of making life more useful and more enjoyable, whether lived in the country or in the city.

The boys and girls in one school, or in one room, if the school is graded, form themselves into a band and elect officers, which are a spy and a guardian. This band fixes its own time for meeting and adopts its own methods of procedure. Enrollment cards to be signed and returned are furnished from the college. A charter will be sent to each band upon completing enrollment. Each member who sends in an enrollment card will receive an appropriate lapel button indicating that he belongs to the Nature Guard. At the end of the year, a neat certificate will be forwarded to all who have sent in reports during the year.

A printed leaflet is issued monthly during the school year, and a copy is sent to each member of the Nature Guard, and also, on request, to individuals who are interested. The purpose of the leaflet is to furnish a stimulus to nature study by making each month some suggestions bearing on the subject. Monthly reports, giving observations of their own, are requested from the members. Supplemental leaflets for teachers will be issued from time to time, the object of which will be to call attention to the latest views and methods in nature study.

In connection with nature-study work, advice and assistance will be given to schools, to children's organizations, and to individual boys and girls who wish to carry on work with children's gardens. Where a number of gardens are placed together, as in schools or in boys' clubs, the college will send an instructor to teach methods of preparing the ground, planting, cultivating, and harvesting garden crops. Individuals will be given advice by circulars and by correspondence. Application has been made to the Washington County

Agricultural Society to grant premiums to children for seed and plant collections, and for exhibits of a few vegetables which can be easily grown, either in school or home gardens.

Further notes in regard to this work are given in leaflets and circulars issued by the extension department, and correspondence is solicited from any one who may be interested.

The College as an Educational Agency.

In its third form of activity, the purpose and work of the Rhode Island State College is to give college training and culture to young men and young women, not in spite of, but through and with vocational studies. Its courses are intended, first of all, to make the student a self-supporting unit in society, a positive force for social advancement, able and willing not only to maintain himself, but also to carry something of the common social burdens that always weigh upon the thoroughly efficient worker.

I. The Four-Year Courses.

To this end certain college courses, intended to fit men and women for efficiency and leadership in well-defined life-activities, have been prepared. These courses are all founded upon training in mathematics, pure and applied; the English language as a means of intercommunication; and the sciences that deal with matter, force, and life as applied more directly to agriculture, the mechanic arts, and home economics. In the pursuit of these vocational studies, the effort is to accumulate an array of knowledge that, in the activities of industrial life, must be always practically serviceable, and, at the same time, to gain a disciplinary training both of brain and of muscle and nerve that makes for practical effectiveness. These courses, moreover, recognizing that a college course should include not only intellectual training and the knowledge and skill requisite for bread-winning, but also preparation for citizenship, for moral and social life, have intertwined with the vocational work and study previously mentioned, the subjects that most directly make for culture and morality—history, economics, literature, languages, ethics, psychology, and sociology. These are ranked as of equal importance with the bread-winning studies.

The college courses just discussed are four years in length, and base themselves directly on the work of the four years of the high schools.

They thus become an integral part of the school system of the state. Young men and young women, citizens of the state and having requisite high-school training, are admitted to these courses without charge for tuition.

The four-year courses thus offered are the agricultural course, the engineering course, the teachers' course in applied science, and the course in home economics.

THE AGRICULTURAL COURSE.

The agricultural course is intended to give thorough preparation for taking charge of and operating a piece of landed property. Its work is centered around instruction and practice in horticulture, general farming, and animal husbandry (more especially as applied to dairying and the poultry industry). The course consists of practical work combined with thorough study of the sciences bearing directly on such work, viz.: botany, chemistry, geology, zoölogy, anatomy, physics, and entomology. In addition, it embraces the culture and mental discipline arising from the study of mathematics, English composition and rhetoric, history, drawing, modern languages, economics, and English literature. The course is planned to give the student a full and rounded development as worker, as citizen, and as man.

All agricultural students will follow the same work in the first two years; but, at the beginning of the Junior year, with the required work for all students in the course, three optional lines of work are offered, one of which must be selected by the student and followed until graduation. The three lines offered are agronomy, horticulture, and animal husbandry. No option and no subject will be given for which a number of students sufficient to warrant giving it has not applied. For tabulated course, see pages 34–37.

THE ENGINEERING COURSE.

The engineering course has the same requirements for entrance, the same duration, and the same general plan as the agricultural course. Students will follow the course as laid down until the second half of the Sophomore year, at which time, as with the agricultural course, students must elect one of the four optional lines offered, viz.: mechanical, electrical, civil, and chemical engineering. Any line of work for which the number of applicants is insufficient to warrant giving it, the college reserves the right to withdraw.

The course is arranged to prepare young men for skilled and efficient work in the great manufacturing and commercial industries of the state; in the development of electricity as a motive force and in its thousand-fold other applications to the arts and to the life of society; in the activities of the new road-building era upon which we are entering; and in the applications of chemistry as now found in the great industrial establishments. At the same time, in this as in all other courses, it is not forgotten that the man is not a mere lever in his own machinery, and the effort after breadth and completeness of life is steadily maintained. For tabulated course, see pages 34--37.

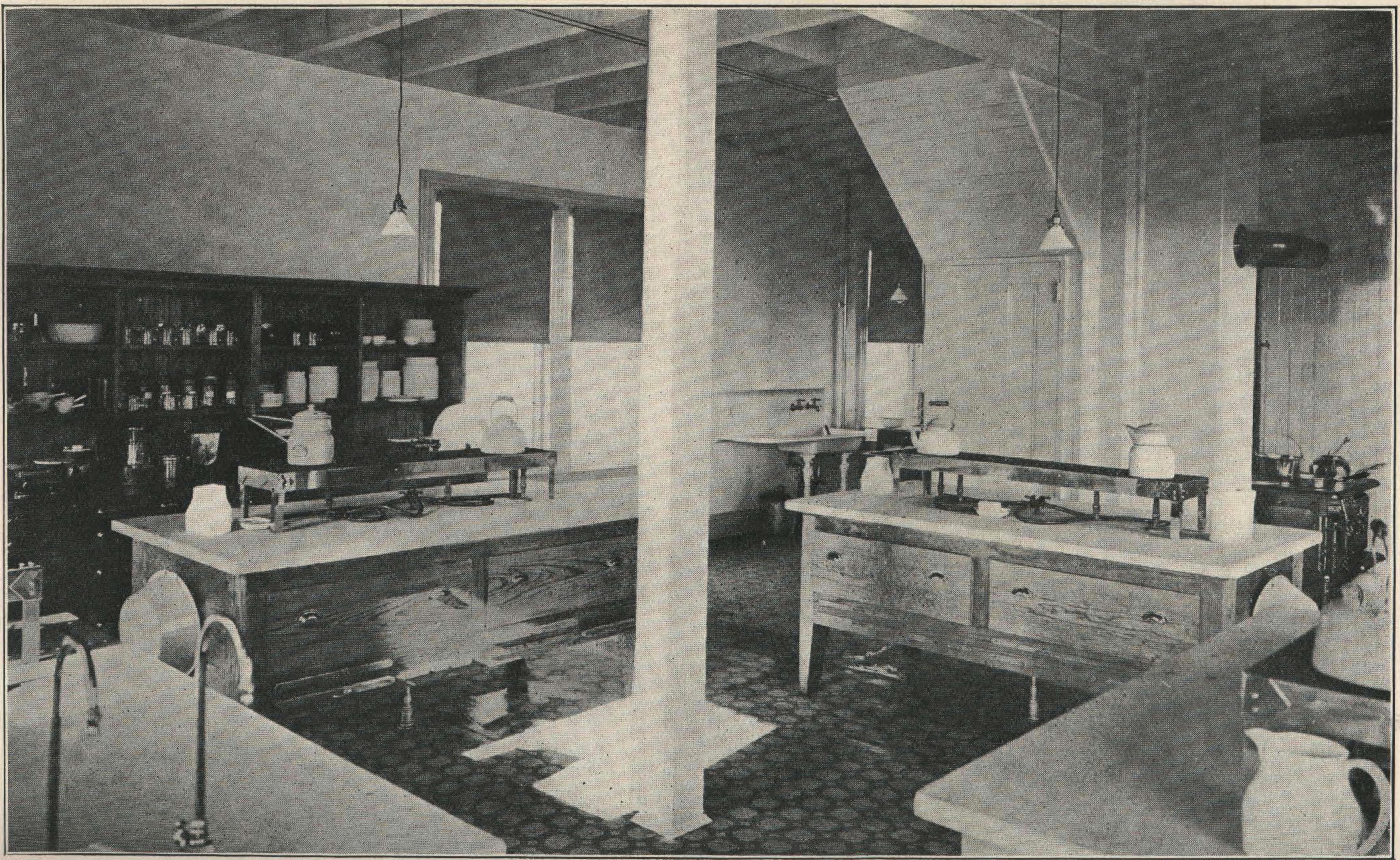
TEACHERS' COURSE IN APPLIED SCIENCE.

This course is intended to prepare persons to teach in industrial schools those branches of applied science that pertain especially to agriculture and the mechanic arts. In such schools it has been found of especial importance that the teachers be trained in an environment of current thought sympathetic with the industrial applications of science and intelligently appreciative of the methods and problems of such work. In response, therefore, to the need, and in accordance with an expressed purpose of the new fund from the United States Government, we have constructed this course. The effort has been to make the course effective for its purpose, while at the same time retaining for it that breadth and that cultural influence that are necessary to fit the whole man or woman for social life and are especially important in persons who, as teachers, will exercise large personal influence over immature youth.

The general plan of the course is the same as that of the other two courses just described. It opens to the student, at the beginning of the Junior year, three options, one of which he must select in conjunction with certain studies required of all. For tabulated course, see pages 34–37.

THE COURSE IN HOME ECONOMICS.

The aim of modern education is to develop character and efficiency. The efficient person is the one capable of self-support—the productive citizen. For efficiency the individual needs several things. He



HOME ECONOMICS LABORATORY.

must have health of body and mind; the control of materials and forces, which comes only from the knowledge of the things with which he must deal, and a power of separating as well as deducing cause from effect. He must have the ability to do, which involves reasoning power, perseverance and self-control. The recognition of the need for a direct teaching of these things is the basis of the universal democratic education of to-day for industry, agriculture, and the home.

It is now universally accepted that no other education is as important for the average man as the education which will teach him how to earn his own livelihood. Just so it needs to be accepted that no other learning is as important for the average woman as that which will make her efficient for her vocation, which for most women is the administration of household affairs. If in the training for citizenship and in the upbuilding of character, the home is the fundamental factor, it is inevitable that home economics must bear an organic part in the general scheme of education. For it is an understood fact that the welfare of a country is threatened when men and women are not trained and ready for the positions of trust and responsibility which fall to their share. This is the great force behind the onward march of so-called practical education, in which to-day the subjects grouped under the name of home economics bear so important a part.

In the various bills presented to Congress in behalf of national aid for such forms of education, these paragraphs appear:

"Our most important and racial institution—the home—can be developed along with other institutions only as we give to it the discoveries of science and build it up through education. It is not enough that America has homes averaging better than homes of other parts of the world; they should be very much better."

"Every city and town should offer opportunity to girls to gain a knowledge of the production and preparation of food and clothing, of lighting, heating, water supply, and sanitation, of household care and decoration, such as would mean a distinctly higher standard for our homes."

"There is the greatest fear that such schools be thought below the standard of our classical schools, and until we dare to take the stand that it is all a question of relative values, and that Latin and mathematics have not as much educational value for certain girls as household science and art have, these schools will probably not perform the greatest service of which they are capable. When we are wide awake to the fact that the solution of our domestic difficulties is dependent on a greater knowledge of production and its wise direction, perhaps we shall be ready to say that learning to do things and learning to understand the reason for doing things will have as great a cultural value as the study of Homer and solving original problems in geometry."

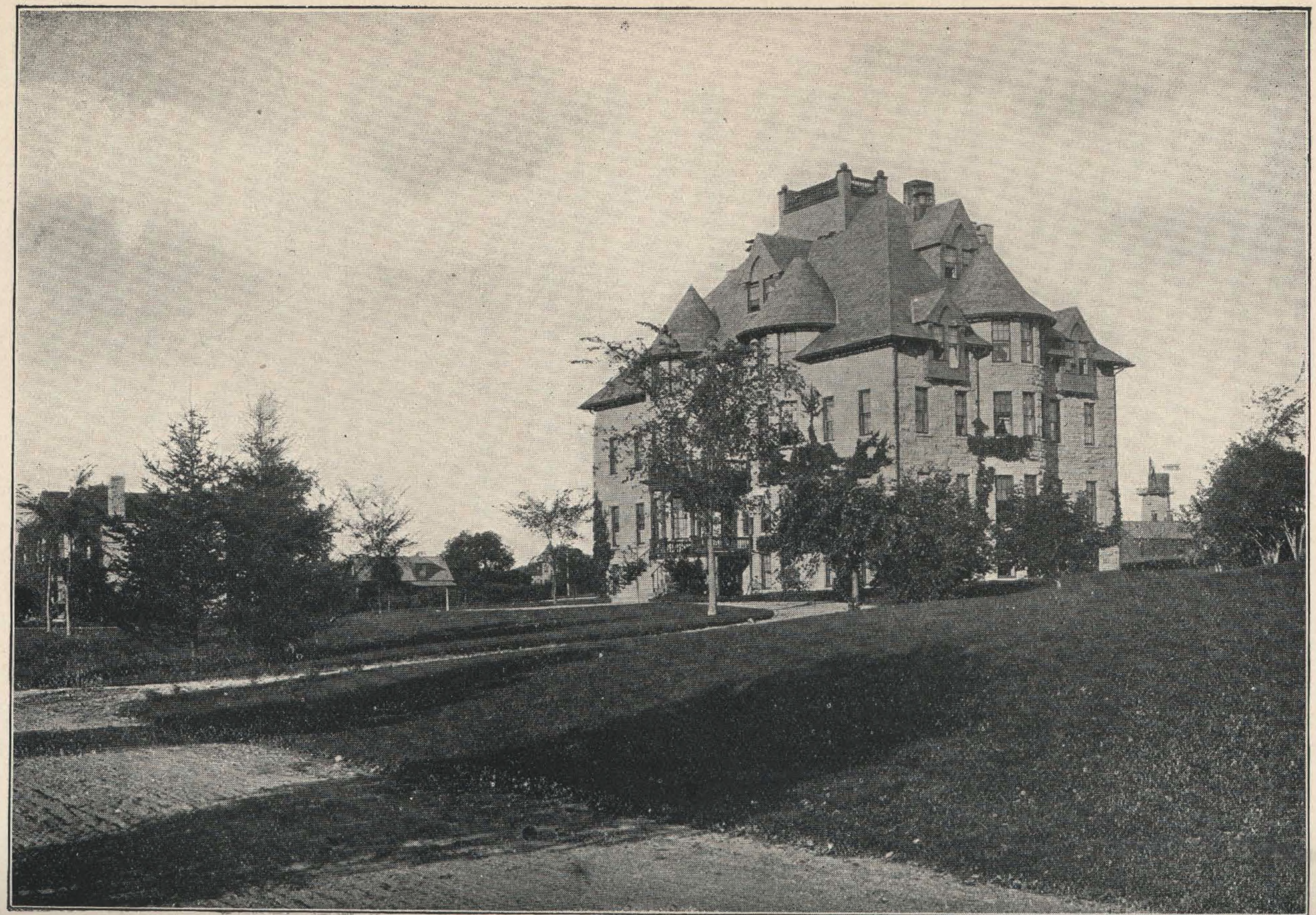
It is to meet the demands for such practical education that the home economics department has been established here. It is so planned as to give a general view of the household in society, and to provide such training as will lead to more healthy, happy, intelligent and economical administration of the home as a social unit. It is also designed to aid in fitting such students as desire to enter special fields of domestic activity in institutional and educational lines of work.

The courses of instruction are planned to meet the needs of two classes of students: (a) those who may be specializing in other lines of work but desire a general knowledge of the principles and facts of home economics; (b) those who wish to specialize in the various lines of this work.

The general course is designed to provide an education in those branches that especially serve the needs of women students, and to meet the demands of the day for training in social and sanitary science. Although the main work is scientific and technical, the importance of artistic and literary training for home life has not been neglected. It is recognized that all the knowledge of right living to be gained through all the avenues of learning is needed to assist the student to a broader conception of citzenship as well as in performing the manifold duties of daily life.

The courses include instruction in the planning, sanitation, decoration, and care of the house and its administration on the economic side; the preparation of food from the scientific and economic points of view; the study of nutrition; the discussion of problems of personal and public hygiene and instruction in the care of infants and young children.

The entrance requirements are the same as for the other college courses. Of the one hundred and sixty credits required for graduation, thirty-three are required in the home-economics department. Three groups of electives are offered. Students are expected to take



DAVIS HALL,

the course as prescribed on pages 34–37, with choice of options; but when entered in other courses in the college, they may elect certain work in the home-economics department, under direction of the head of the department.

REQUIRED WORK IN HOME ECONOMICS.

1.	House Construction, Sanitation and Cost	2½ credits.
2.	Principles of Selection and Preparation of Food	4 "
3.	Household Hygiene	1½ "
4.	Economic Uses of Food	5 "
5.	Personal Hygiene	2 "
6.	Dietetics	2 "
7.	Home Decoration	2 "
8.	Food Supplies and Dietaries	3 "
9.	Public Hygiene	1 "
10.	Textiles	2 "
11.	Child Hygiene	2 "
12.	Household Art	2 "
13.	Study of the Family	2 "
14.	Household Administration	3 "

OPTIONS.

Group A.	Education and Home Economics	14 credits.
" B.	Agriculture	14 "
" C.	Elective	14 "

II. Short Courses in Agriculture, in Mechanic Arts, and in Home Economics.

There is a large class of young men and women who, unlike the more fortunate young people that are able, after completing the high-school work, to go through a full four-years' college course, find themselves compelled, sometimes with a high-school course as preparation, much more frequently, however, without such training, to plan for entrance into industrial life by the shortest and quickest preparation that will give them the elementary knowledge and skill requisite. For such persons we have arranged a short course in agriculture, one in mechanic arts, and special work in home economics. These courses are each two years in length; they require for entrance only that degree of training represented by a common-school education; *they are in no sense preparatory to the corresponding college courses, and they do not, either directly or indirectly, lead to an academic degree.*

A certificate, however, will be awarded on completion of one of these courses.

They are intended to be intensely and dogmatically practical, giving facts and processes without attempting to explain and correlate these by referring them to their basis in scientific theory or investigation. Moreover, each part of the course, and each subject, is in a way independent; so that the student who remains for any part of the course, say one year or even less, will be able to realize a definite acquisition, a certain distinct fitness, that he did not before possess. It is hoped that, after a little, the certificate may come to have among farm owners and among the employers of labor in the factories and shops of the state, a certain well-defined value as commendatory of the persons holding it. For tabulated statement of courses, see page 38.

III. Special Poultry Course.

For many years this college has offered a winter course in the poultry industry. In fact, the first poultry course to be offered in the United States was offered here eleven years ago. The college will continue to offer a course during the winter term.

Requirements for Admission to the Degree Courses, 1909.

The requirements herein mentioned are reckoned in "points." A "point" is the amount of work that a good New-England high school exacts of its pupils during one recitation period per school-day for the school year. Two laboratory periods are reckoned as equivalent to one recitation period.

For the year 1909–10 the requirements will consist of eleven such points; for the year 1910–11, the minimum number will be thirteen points; and for the year 1911–12, fourteen points.

The entrance subjects are divided into two groups named below, as Group A and Group B. The subjects named in Group A must, with one exception, all be offered, and to the minimum extent represented by the points attached. They make a total for engineering candidates of nine points, for others of eight and one-half points. Group B names the list of subjects from which the necessary additional points may be offered; opposite each subject is stated the maximum number of points on each subject that will be accepted.

Where the same subject is named in both groups, the total number of points that may be offered on the subject is the sum of the points stated after that subject in the two groups. The necessary additional number of points from Group B may be made up by any combination of points or fractions of points not below two-fifths. For instance, for 1909, a candidate may make up his entrance requirements by offering records showing passing grades on

Subjects of Group A	8½
Physiography	⅖
History	⅗
German	⅗
Drawing	⅗
Shopwork	½
Total	11⅕

Examinations for entrance will be held at the close of the school-year in June, and also at the opening in September, as announced in the calendar, page 11. On any or all of the subjects named in both groups satisfactory standings from any reputable high school will be accepted in lieu of examinations, on presentation of a copy of the student's full record in the high school, showing clearly the nature of the work pursued in each subject, time devoted to it, and grade of work done. This copy must be duly signed by the proper official of the school, and must be accompanied by a certificate of good moral character. The latter, however, may be from any reputable source. On application, blanks showing definitely the full nature of the information desired from the high school will be furnished.

GROUP A.

(These subjects, with the exception stated, are required of all students to the extent indicated by the number of points named in each case.)

English	3
Algebra	1½
Plane Geometry	1
History	1
Physics	1
French or German	1
Solid Geometry—For engineering students only	½

Group B.

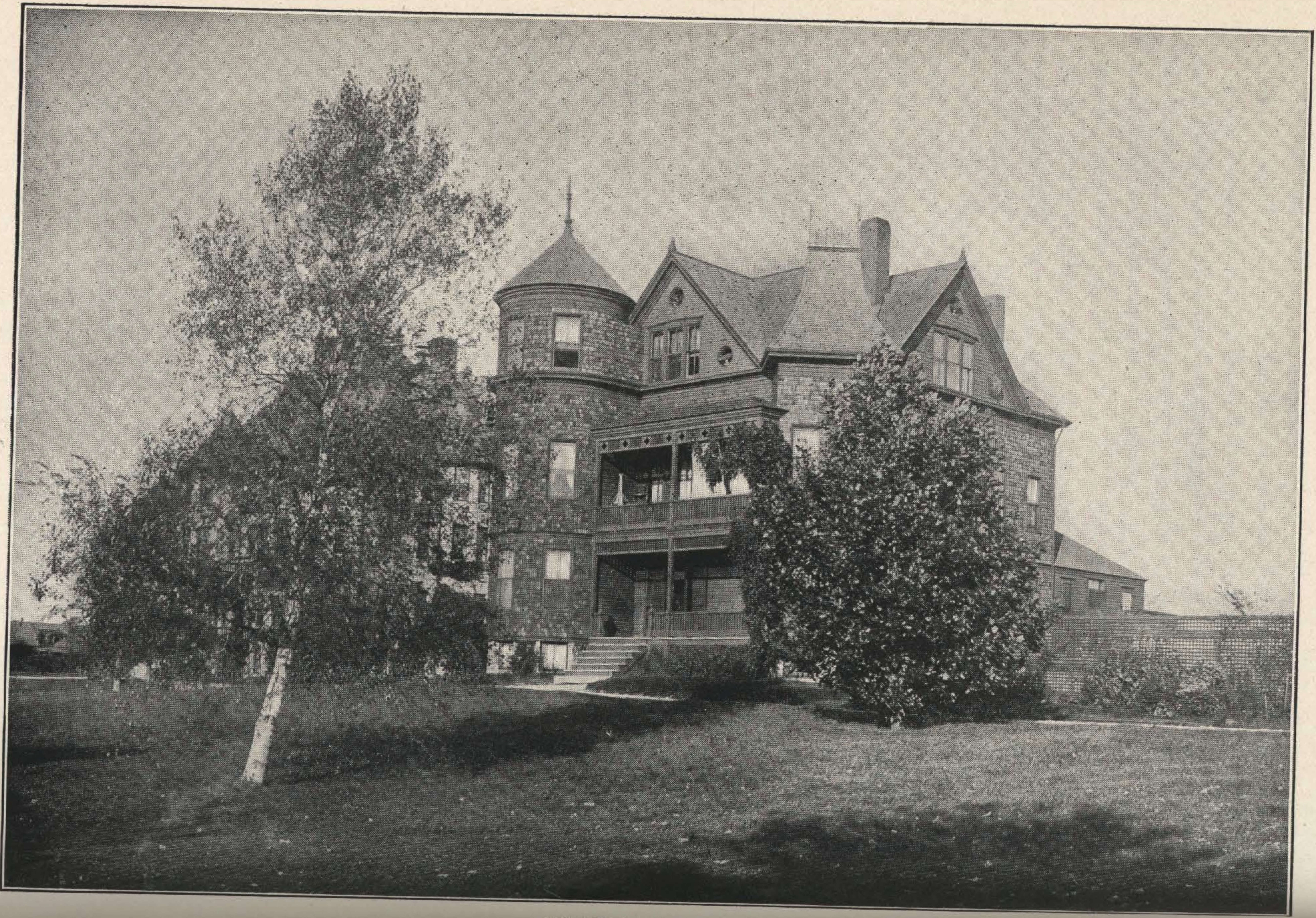
(From this group points, in addition to those of Group A, sufficient to make up the whole number of points required for the year will be required. Any combination of points, including units or fractions not less than two-fifths, will be allowed.)

English	1
Foreign Language	3
History	1
Civics	1
Physiography	1
Botany	1
Zoölogy	1
Chemistry	1
Geology	1
Physiology	1
Drawing	1
Farm Practice	½
Domestic Science	½
Shop Practice	½
Solid Geometry—For other than engineering students	½

From and after the current college year (1908–09) no purely preparatory or Sub-Freshman students will be enrolled. In order, however, to provide for those now enrolled (1908–09) in the Sub-Freshman work and to facilitate the passage to more extended entrance requirements, students will be accepted with as many as four conditions on entrance requirements. Those having more than two such conditions will be registered with the special students. All conditions will be made up by assignment to coaching classes provided by the college free of expense. For deficiencies in the subjects of Group A one coaching class in each subject will be provided. For deficiencies in the subjects of Group B, such classes will be provided as shall seem best under the circumstances.

Candidates not presenting satisfactory standings from reputable high schools will be examined, over ground corresponding to the number of points attached, on all the subjects of Group A and on such of Group B as they may offer.

In algebra the candidate should have mastered Wentworth's school algebra or the equivalent, through the subject of quadratics. He should possess a clear knowledge of the whole subject of plane geometry, as presented in Wells's book, or an equivalent. The can-



BOARDING HALL.

didate must show, also, thorough familiarity with arithmetic in all its processes.

In English there will be two parts to the examination; one testing his technical knowledge of the English language, his vocabulary, and his power of effective expression, the other determining his acquaintance with masterpieces of English literature. In the first, the candidate will be required to write an essay of some four hundred words, selecting his subject from a list submitted by the examiner, all of which will be taken from common life and bear upon things with which the candidate is familiar. The essay will be graded upon the plan, the method of developing the sub-topics, the consecutiveness of the thought, the control of the English sentence, and the aptness and range of expression. Questions on simple matters of grammar and rhetoric will also be required. The second part of the examination—that on English literature—will be conducted after the manner and on the subjects prescribed for entrance to New-England colleges. On request, the list of books prescribed for 1909-10 will be sent; or the list may be obtained from the nearest high-school principal.

Degrees.

The college confers two degrees. The degree of Bachelor of Science is conferred upon a student who has completed one of the four-year courses outlined on pages 34-37. The degree of Master of Science is conferred upon those holding a Bachelor's degree from this institution, in regular order, or from other institutions having equal requirements, upon the completion of one year of resident study, the presentation of a satisfactory thesis in applied or economic science, and upon passing examinations in the subjects pursued. Persons wishing to apply for the Master's degree should write to the Committee on Graduate Study for further details.

Teachers' Certificates.

The following resolution recently adopted by the Board of Education of this state is self-explanatory: "The certification of the president (of this college) that an applicant for a teacher's certificate has pursued a secondary school course of four years, subject to the approval of the committee on qualifications, and in addition thereto has pursued a four years' collegiate course in the Rhode Island

College will be received as evidence of the required qualifications in scholastic subjects for a teacher's certificate of the first grade."

Opportunities Offered to Women.

The course in home economics is especially designed for women, although all other courses are open to them. Special waiting and study rooms are provided for the women who are day students. On and after September, 1909, commodious quarters for women boarders will be provided on the college grounds.

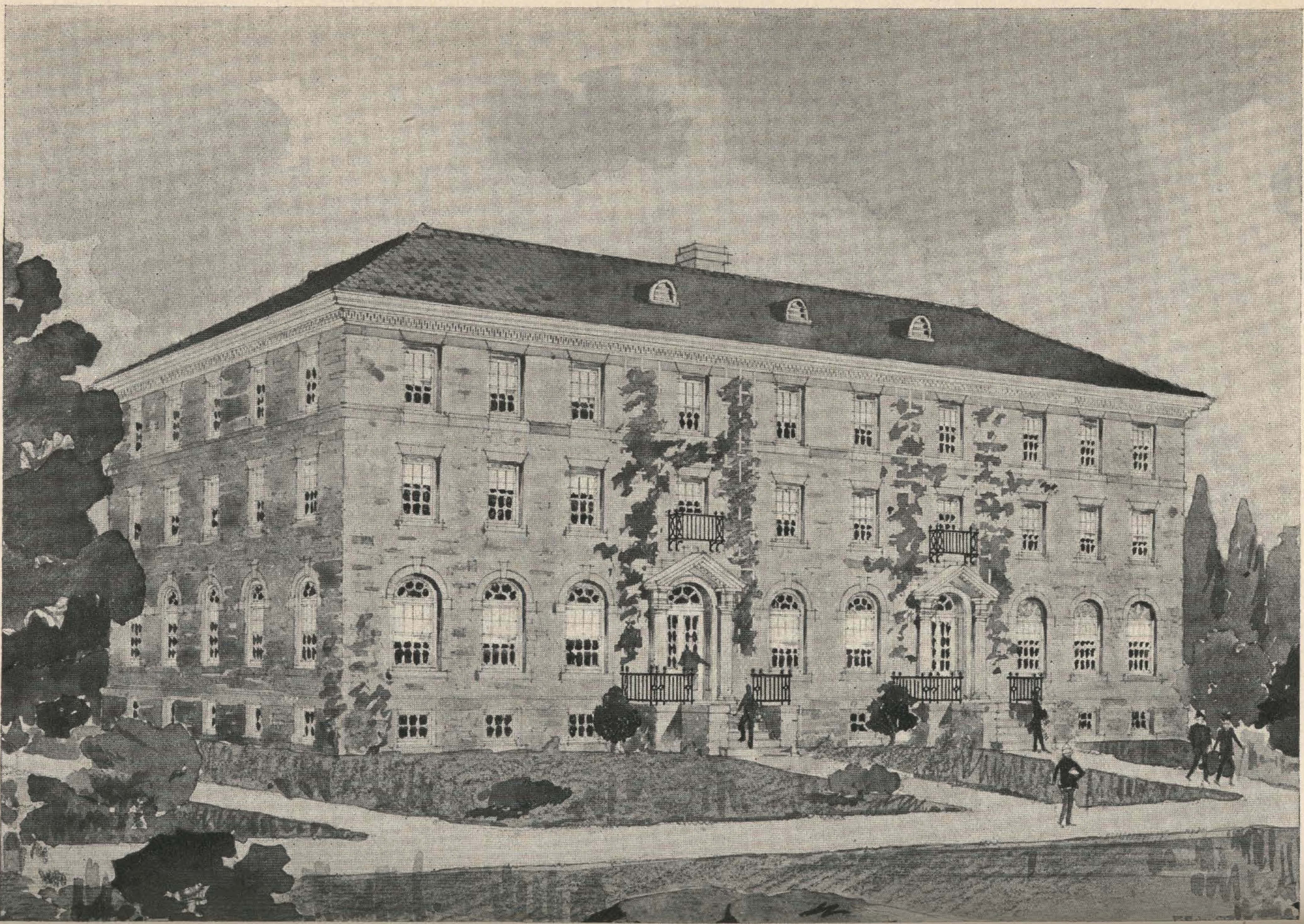
Expenses.

Tuition is free to residents of Rhode Island. To non-residents of the state, tuition is $15.00 a term or $30.00 a year.

The regular college expenses are tabulated as follows:

Board, $3.50 per week	$126 00
Room-rent, including heat and light	30 00
Incidental fee, $4.50 per term	9 00
Laboratory deposit, $5 per term	10 00
Uniform for military drill	16 00
	$191 00

The first four items must be paid quarterly in advance; that is to say, $43.75 will be required at the opening of the year, September 14, 1909, and also at each of the following dates: November 16, 1909, February 3, 1910; and April 7, 1910. Non-residents of the state should add to this sum $7.50 for tuition each quarter. In order to secure dormitory accommodations, the student is required to deposit one dollar with the application, the dollar to be credited on the fall-term room-rent. If the student fails to take the room, the dollar is forfeited. The uniform also must be paid for at the opening of the college year in advance. Against the laboratory deposit will be charged all material used in the various laboratories, and the destruction, breakage, or marring of apparatus and tools. If anything remains after such deductions have been made, the said remainder will be refunded. If, on the other hand, the charges shall at any time exceed the deposit, the student will be required to cover the excess by a further deposit.



NEW DORMITORY — IN PROCESS OF CONSTRUCTION.

Nothing has been said concerning books. The probable cost of these will be from $15.00 to $30.00 per year. For miscellaneous expenses connected with college life, students should add a sum varying from $10.00 to $25.00. A fee of 50 cents will be charged for each examination to make up a condition. Graduates pay the cost of diplomas, $5.00. *No diplomas will be issued until all term bills have been paid.* Room-rent and incidental deposit will not be refunded on withdrawal during the quarter. Students not taking any laboratory work will not be required to make a laboratory deposit. An athletic tax levied by the students upon themselves will be taken at the college office at the times set for college dues.

UNIFORM.—Every able-bodied male student is required to drill and to wear a uniform. The uniform must be paid for immediately on entering the college, when the students are measured for the suits. When worn only on drill and properly cared for, one uniform may last two or more years. The student may, however, wear his uniform all the time.

TRANSPORTATION.—The college conveys students daily to and from the railroad station free of charge. Once at the beginning and end of each term, a team conveys trunks to and from the station.

BOARDING STUDENTS.—The price of board for 1909–10 will be $3.50 per week. Students who *leave regularly every week* on Friday afternoon and return Monday morning will pay $2.50 per week. No other reduction on board is made for less than two whole days' absence at one time, and then only when written notice is given in advance. No person will be admitted to the dining-room until he has secured from the bursar a meal ticket, on the back of which will be found the rules governing the holder of such ticket. After this ticket is issued, all charges for board will be made in accordance therewith unless the student has the ticket changed by the bursar. Arrangement of charges for meals sent to students' rooms for any cause must be made in advance.

FURNITURE.—The rooms in the women's dormitory are provided with necessary furniture, including mattresses, but no other bedding material. *All students in the men's dormitory are required to supply their own furniture and bedding.* The necessary furniture may be obtained at the college when desired. A room may be furnished for from $8.00 to $10.00. Iron bedsteads three feet wide are included under room-rent. The furniture, if properly kept, may be sold, when the student leaves, for one-half to three-fourths the original price.

New Dormitory.—The new dormitory for men is now in process of erection and is under contract to be completed September 1, 1909. It will contain comfortable and well lighted and ventilated rooms for one hundred men students, lodged mainly two in a room. There will be a large dining-hall where all may be seated at one time, with a modern kitchen and proper accessories. It contains also a handsome social room, an assembly room, and a basement for bowling-alley, etc. The rooms will be rented on the same terms and under the same conditions as were offered last year. Students especially desirous of rooming in the dormitory are advised to make their applications at once.

Rooms in the Village.—Arrangements have been made for rooms in the village of Kingston, some of these being under college management and others in private houses. In the case of the former, room-rent will vary from 60 cents to $1.00 per week, with stoves and bedsteads furnished, the student to provide other furnishings and fuel himself. Furnished rooms in private houses for students who occupy them throughout the college year range from $1.25 to $2.00 per week.

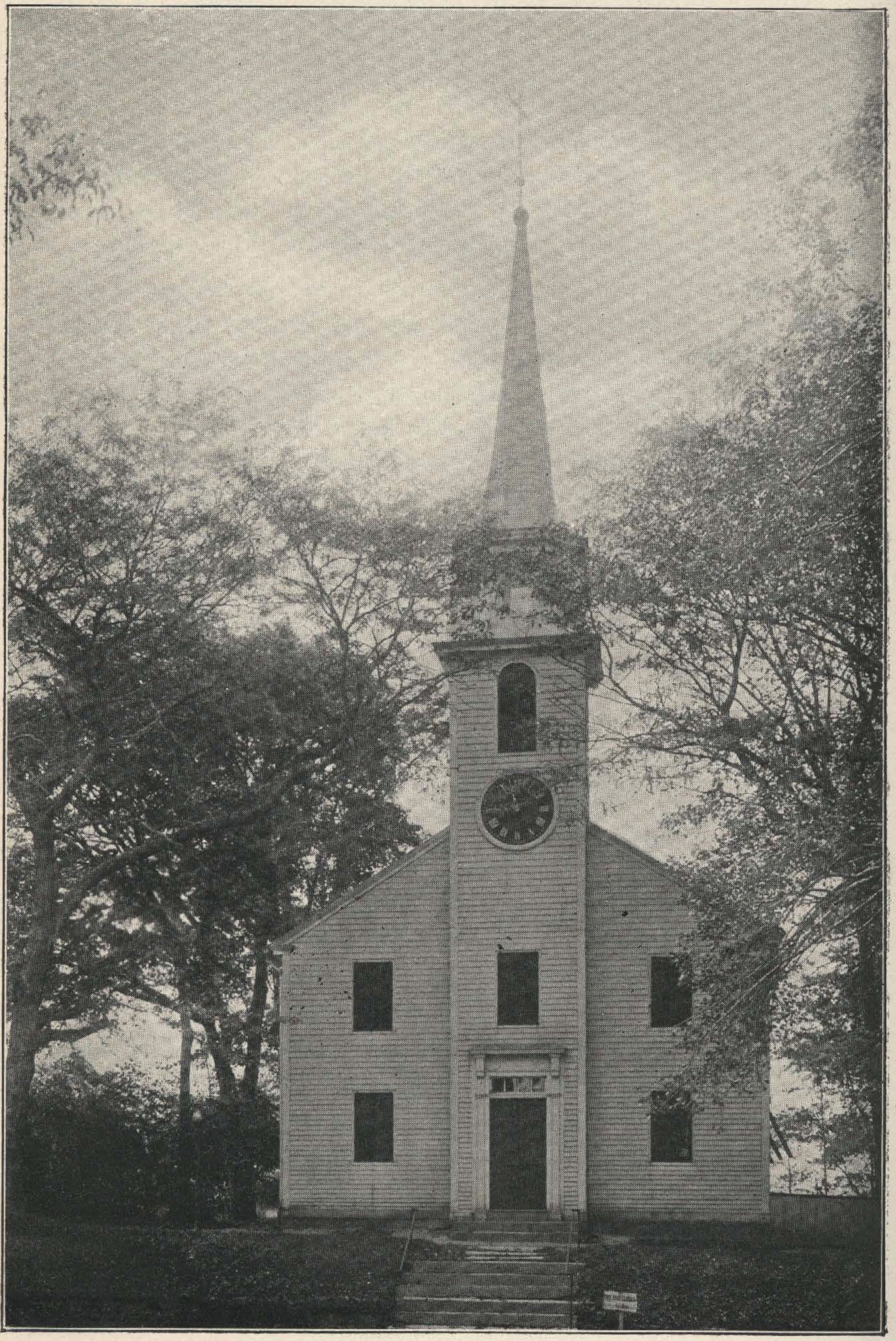
College Store.—Students will be required to pay cash at the store for all books and other supplies.

Damage Fund.—All damage not due to ordinary wear will be assessed to students as follows:

1. Students at once acknowledging damage and agreeing to pay for same will be assessed actual cost of repair, including labor.
2. Students found guilty of such damage but not acknowledging and settling for the damage will be charged double the cost of repair.
3. Students will be responsible for damage in their own rooms.
4. Damage that is not settled as above may be assessed to all the students or to a group of students, pro rata. Each case and the amount of assessment will be considered on its merits.

Employment at the College.

There is a certain amount of labor about the college buildings, on the farm, at the experiment station, and in the offices and labora-



THE VILLAGE CHURCH.

tories, for which students will be employed whenever it is feasible to do so. Industrious students frequently earn an amount which aids considerably in paying their expenses,—a sum varying from $25.00 to $125.00 per year.

In view of the fact, however, that the amount of this work is strictly limited and that it is not the policy of the college to create such work, and, furthermore, because of the increasing number of students and the more frequent applications for student labor, it seems desirable to state the conditions under which this work will hereafter be assigned.

1. Application for work must be made on a blank which will be issued to the student on request. *Persons desiring such work must, if under age, bring a statement from parent or guardian certifying to what extent the student must depend upon himself for support.* It must be borne in mind that the student can not make this certification for himself. Application for work, however, under no circumstances creates a claim on the college that work shall be assigned the applicant.

2. At a certain time before the opening of the fall term all applications for work will be considered, and appointments will be made after due consideration of

    (a) Capability for the work.
    (b) Trustworthiness.
    (c) Good record as a student.
    (d) Need for financial aid.

[NOTE: Other things being equal, preference will be given to residents of the state, to upper-class students, and to those who room and board at the college.]

3. Such appointments are subject to revocation at any time, for

    (a) Incompetency.
    (b) Unfaithfulness in discharge of duty.
    (c) Misconduct or disloyalty to the institution.
    (d) Bad record in studies.

4. Such appointments must be recognized as

    (a) A mark of trust and responsibility.
    (b) A real and vital part of one's training for promptness, for initiative, and for leadership.
    (c) One of the very best criteria the teacher has in determining his estimate of the student's character, both for his own guidance and for recommendation to employers.

5. Payment for services will vary from ten to fifteen cents per hour, according to the grade and difficulty of the work and the experience of the student. In general, students should not expect more than ten cents an hour for the first year. It is a rule of the college that any student desiring to perform more than twenty hours of student labor per week must secure permission from the faculty council. In the future, it may be necessary to limit the amount which any one student may receive for student labor.

Some young people have the impression that the college offers such opportunities for self-help that it is safe to enter with practically no funds, relying solely on money earned while here. In exceptional cases this may be done, but prospective students are strongly advised not to enter until they have at least $100.00 at their disposal. A student who has to make his own way must also plan to work steadily during both the short and long vacations. Occasional vacation work at the college can be furnished to students, but as a rule they should look elsewhere for this class of work.

Religious Influences.

This college is a state institution, and, consequently, the widest latitude is given to all creeds and forms of religious belief. Simple chapel exercises are held, and are conducted by the president or some other member of the faculty. While in the main attendance is not compulsory, it is desired and expected that all students will attend chapel. On one day of each week special exercises are held which all are required to attend.

A branch of the Intercollegiate Young Men's Christian Asociation is doing active work among the men students, holding a meeting every Sunday throughout the year. This association conducts courses in bible study and is taking the lead in endeavoring to establish sound and high ideas of college life.

The Young Women's Christian Union is doing a similar work for the young women.

The village church cordially invites all students to attend its services and, if possible, to join its membership. Every effort is made by the college to minister to the higher life of the students and to bring before them the noblest ideals, without in any way attempting to coerce them to particular beliefs.

The College Lecture Association.

Faculty and students, uniting with residents of the vicinity, conduct a winter lecture course, the aim of which is to introduce talented speakers upon subjects both entertaining and instructive. The association may be looked upon as a permanent and important factor in college activities. For the season of 1908–1909 the following program was secured:

Dec. 18.	Hon. Arthur K. Peck, THE STORM HEROES OF OUR COAST. (Illustrated).
Jan. 8.	Mr. Phidelah Rice, in DAVID GARRICK.
Feb. 15.	Dr. D. F. Fox, A NEGLECTED CAVALIER.
Mar. 20.	Germain, the Wizard.
April 2.	The Dodge Trio and Miss Helen Westgate. Violin, 'Cello, Piano, and Voice.

The Kingston Prize.

For some years the sum of sixty dollars has been offered annually by a friend of the college to encourage literary work among the students. The contest in 1908 took the form of a debate upon the proposition, "*Resolved*, That our present navy is sufficiently large." R. H. Carpenter, '10, and H. R. Tisdale, '09, maintained the affirmative; while O. M. Drummond, '12, and C. B. Edwards, '10, contended for the negative. The first prize of $25.00 was awarded to Mr. Carpenter as the best individual speaker; the second of $15.00, to Mr. Drummond. Since the judges declared the debate a tie, $20.00, which was to have been awarded to the winning side, was divided equally among the four speakers.

The Library.

The library occupies a large room in Lippitt Hall, and numbers over seventeen thousand volumes. The books are arranged in stacks, to which the students have free access. The Dewey system of classification is used; and a dictionary catalogue gives author, subject and title. As the library has been from the first intended for reference work, the various departments of instruction have made their selections with the greatest care. Combined with the library is the reading-room, where one hundred and twenty of the leading periodicals—of literary, scientific, and general interest—are on file. From time to time these are bound, and prove of great value in reference work.

Since the library has been a government depository sixteen hundred books and pamphlets have been received, which are of value in scientific investigation and research.

The library is open every week day from 7:30 A. M. to 6:00 P. M., with the exception of an hour at noon. The librarian or her representative is in constant attendance to aid any one in search of information. As the college is an institution designed to further the educational interests of Rhode Island, all residents of the state are at liberty to use its library.

Location.

The college campus is one and a half miles from Kingston station, which is at the junction of the main line of the N. Y., N. H. & H. R. R. with the Narragansett Pier branch, thus insuring excellent railroad accommodations. The buildings are on a hill which commands an extended view of the surrounding country—a location both healthful and beautiful. Sixteen trains stop daily at the station, so that the college is accessible from Providence or from New York city at almost any hour in the day. The ride from Providence is about forty to forty-five minutes in length. From New York the time is some four hours.

The Courses of Study Leading to a Degree.

EXPLANATORY.—The Roman numeral following a subject refers to the subject number; the Arabic figures next following indicate the page of the catalogue on which the subject is described. The last Arabic figure indicates the number of hours credit for the subject, and when enclosed in brackets, indicates laboratory credits. A credit is given for one recitation; or for one exercise of two hours in laboratory, field, or shop. All women students throughout the four years are required to take physical exercise and hygiene in place of military drill and tactics. Consulting with the committee on courses of study, the student chooses his electives from the subjects described on pages 39–73. For requirements of admission to these courses, see pages 23–26.

Freshman Year.

Agriculture.

First Term. Subjects.	First Term. Credits.	Second Term. Credits.
English I, Rhetoric (66)	1	1
Oral Exp. I, Reading (66)	1	1
Mod. Lang., Ger. I, Element. (66)	4	4
{ Math. III b., Alg. (67)		......
{ Math. III c., Trig. (67)	5	......
Chem. I, General (48)	2 [1½]	
Chem. II, Gen. and Qual. Anal. (48)		2 [1½]
Bot. I, General (46)	1 [2]	1 [2]
An. Hus. I, Stock Judging (42)		[2]
An. Hus. III, Breeds (42)		2
An. Hus. XII, Poultry (43)	[1]	......
Hort. I, Propagation of Plants (44)		1 [1]
M. Eng. I, Mech. Drawing (57)	[1½]	......
Fr. Drawing II, Pencil (51)		[1]
Mil. S. and T. I, Drill (69)	[1]	[1]
Mil. S. and T. II, Theory (69)	1	1

Engineering.

First Term. Subjects.	First Term. Credits.	Second Term. Credits.
English I, Rhetoric (66)	1	1
Oral Exp. I, Reading (66)	1	1
Mod. Lang., Ger. I, Element. (66)	4	4
{ Math. III b., Alg. (67)		......
{ Math. III c., Trig. (67)	5	......
Math. IV b., Trig. and Analyt. (67)		5
Chem. I, General (48)	2 [1½]	
Chem. II, Gen. and Qual. Anal. (48)		[1½] 2
M. Eng. I, Mech. Drawing (57)	[3]	[3]
M. Eng. II, Forge and Foundry (57)	[3]	......
M. Eng. III, Pattern Making (57)		[3]
Mil. S. and T. I, Drill (69)	[1]	[1]
Mil. S. and T. II, Theory (69)	1	1

Teachers' Course in Applied Science.

First Term. Subjects.	First Term. Credits.	Second Term. Credits.
English I, Rhetoric (66)	1	1
Oral Exp. I, Reading (66)	1	1
Mod. Lang., Ger. I, Element. (66)	4	4
{ Math. III b., Alg. (67)		......
{ Math. III c., Trig. (67)	5	......
Math. IV b., Trig. and Analyt. (67)		5
Chem. I, General (48)	2 [1½]	......
Chem. II, Gen. and Qual. Anal. (48)		2 [1½]
Bot. I, General (46)	1 [2]	1 [2]
Fr. Drawing II, Pencil (51)	[2]	[2]
{ Mil. S. and T. I, Drill (69)	[1]	[1]
{ Mil. S. and T. II, Theory (69)	1	1
or		
{ Physical Training	[1]	[1]
{ Home Ec. V, Hygiene (52)	1	1

Home Economics.

First Term. Subjects.	First Term. Credits.	Second Term. Credits.
English I, Rhetoric (66)	1	1
Oral Exp. I, Reading (66)	1	1
Mod. Lang., Ger. I, Element. (66)	4	4
{ Math. III b., Alg. (67)		......
{ Math. III c., Trig. (67)	5	......
Chem I, General (48)	2 [1½]	......
Chem. II, Gen. and Qual. Anal. (48)		2 [1½]
Bot. I, General (46)	1 [2]	1 [2]
Fr. Drawing II, Pencil (51)	[1]	[1]
Fr. Drawing VIII, Architectural (51)	[1]	[1]
Physical Training	[1]	[1]
Home Economics:		
I. House Construction (52)	2 [½]	......
II. Food (52)		2 [2]
III. Household Hygiene (52)		1 [½]

Sophomore Year.

Agriculture.

First Term.		Second Term.
Subjects.	Credits.	Credits.
Engl. II, Newspaper Work (66)	1	......
Engl. III, Argumentation (66)		1
Oral Exp. II, Dramatic (66)	1	1
Mod. Lang., Ger. II, Intermed. (67)	3	3
Chem. III, Qual. Anal. (48)	[3]	......
Chem. IV, Organic (48)		3 [1]
Phys. I, Descriptive (71)		5
Bot. II, Economic (46)	1 [2]	......
Zoöl. I, General (73)	1 [2]	......
Zoöl. III, Physiology (73)		3 [1]
Agr. II, Forage Crops (40)		2
Hort. II, Veg. Gard. (44)	2	......
Hort. IV, Spray. and Prun. (44)		[1]
Civ. Eng. I, Surveying (62)	1 [2]	.....
Mil. S. and T. I, Drill (69)	[1]	[1]

Engineering.

First Term.		Second Term.
Subjects.	Credits.	Credits.
Engl. II, Newspaper Work (66)	1	......
Engl. III, Argumentation (66)		1
Oral Exp. II, Dramatic (66)	1	1
Chem. III, Qual. Anal (48)	[3]	......
Phys. II, General (71)	4	4
Phys. III, Laboratory (71)	[1½]	[1½]
Math. V a,, Analyt. and Cal. (67)	5	5
M. Eng. IV, Element. Mechanics (57)		2
M. Eng. V, Des. Geom. (57)	3	......
Mil. S. and T. I, Drill (69)	[1]	[1]
Options: A, B, C, D. One of these must be chosen.		
A. Mechanical Engineering:		
VI. Mech. Drawing (57)		[2]
VII, Machine Shop (57)		[3]
VIII, Pattern Making (58)		[2]
Civ. Eng. I, Surveying (62)	1 [2]	
B. Electrical Engineering:		
M. Eng. VI, Mech. Drawing (57)		[2]
M. Eng. VII, Machine Shop (57)		[3]
Civ. Eng. I, Surveying (62)	1 [2]	......
C. Civil Engineering:		
I, Surveying (62)	1 [2]	
II, Topograph. Survey. (63)		1 [2]
M. Eng. VI, Mech. Drawing (57)		[2]
M. Eng. VII, Machine Shop (57)		[3]
D. Chemical Engineering:		
Chem. IV. Organic (48)		3 [1]
Mod. Lang., Ger. II, Intermed. (67)	3	3

Teachers' Course in Applied Science.

First Term.		Second Term.
Subjects.	Credits.	Credits.
Engl. II, Newspaper Work (66)	1	......
Engl. III, Argumentation (66)		1
Oral Exp. II, Dramatic (66)	1	1
Mod. Lang., Ger. II, Intermed. (67)	3	3
Chem. III, Qual. Anal. (48)	[3]	......
Chem. IV, Organic (48)		3 [1]
Phys. II, General (71)	4	4
Phys. III, Laboratory (71)	[1½]	[1½]
Bot. II, Economic (46)	1 [2]	......
Zoöl. I, General (73)	1 [2]	......
Zoöl. II, General (73)		1 [2]
Zoöl. IX, Methods in Nat. Study (73)		1 [2]
Mil. S. and T. I, Drill (69)	[1]	[1]
or		
Physical Training	[1]	[1]

Home Economics.

First Term.		Second Term.
Subjects.	Credits.	Credits.
Engl. II, Newspaper Work (66)	1	......
Engl. III, Argumentation (66)		1
Oral Exp. II, Dramatic (66)	1	1
Mod. Lang., Ger. II, Intermed. (67)	3	3
Chem. III, Qual. Anal. (48)	[3]	......
Chem. IV, Organic (48)		3 [1]
Zoöl. I, General (73)	1 [2]	......
Zoöl. III, Physiology (73)		3 [1]
Fr. Drawing III, Hist. of Art (51)	2	1
Fr. Drawing IV, Color Problems (51)		[1]
Physical Training	[1]	[1]
Home Economics:		
IV. Uses of Food (52)	2 [3]	......
V. Personal Hygiene (52)	1	1
VI. Home Decoration (52)		2
VII. Dietetics (53)		[2]

Junior Year.

Agriculture.

First Term.		Second Term.
Subjects.	Credits.	Credits.
Engl. IV, Mod. Engl. Prose (66)	2	1
Oral Exp. III, Debating (66)	1	1
Hist. I, Industrial (65)	2	3
Mil. S. and T. I, Drill (69)	[1]	[1]
Bot. IV, Forestry (46)		2
Chem. XIV, Agricultural (49)	3 [1]	......
Zoöl. IV, Ec. Entomol. (73)		3 [1]
Agr. III, Soils and Fert. (40)	3 [1]	......
Agr. IV, Farm Crops (40)		3 [1]
Agr. VII, Farm Man. (41)		2
An. Hus. VII, Dairy Prac. (42)	1 [1½]	......
Hort. III, Fruit Culture (44)	2	......
M. Eng. II, Forge and Foundry (57)	[1]	......
M. Eng. VII, Mach. Shop (57)		[1½]
Elective	5	5

Engineering.

First Term.		Second Term.
Subjects.	Credits.	Credits.
Engl. IV, Mod. E. Prose (66)	2	1
Oral Exp. III, Debating (66)	1	1
Hist. I, Industrial (65)	2	3
Mil. S. and T. I, Drill (69)	[1]	[1]
Options: A, B, C, D.		
One of these must be chosen.		
A. Mechanical Engineering:		
IX, Steam Eng. (58)	3	3
X, XI, Ap. Mech. Hydr. (58)	5	5
XII, Mechanism (58)	3	......
XIII, Valve Gears and Dy. (58)		3
XIV, Mach. Shop (58)	[3]	[3]
XV, XVI, Exp. Eng. a. b. (59)	[2]	[2]
B. Electrical Engineering:		
I, II, Direct Cur. (61)	3	[3]
V, Theory Alt. Cur. (61)		1½
IX, Elect. Illum. (61)	1½	......
Phys. IV, El. Meas. (71)	1½	......
Phys. V, El. Meas. (71)		......
Phys. VI, Photo. Meas. (71)	[1½]	......
M. Eng. IX, Steam Eng. (58)	3	3
M. Eng. X, XI, Ap. M., Hydr. (58)	5	5
M. Eng. XV, XVI, Exp. Eng. a. b. (59)	[2]	[2]
C. Civil Engineering:		
III, Railroad Eng. (63)	4	......
IV, Graphic Statics (63)	2	......
V, Roads and Pave. (63)		3 [1]
M. Eng. IX, Steam Eng. (58)	3	3
M. Eng. X, XI, Ap. Mech., Hydr. (58)	5	5
M. Eng. XV, XVI, Exp. Eng. a. b. (59)	[2]	[2]
Geology I, (65)		2
D. Chemical Engineering:		
Chem. V, VI, Organic. (48)	3 [1]	[3]
Chem. VII, Quant. Anal. (49)	[3]	[8]
Chem. XI, Det. Min. (49)		[1½]
Chem. XXI, Reports Dis. (49)	1	1
M. Eng. IX, Steam Eng. (58)	3	1½
M. Eng. X, Ap. Mech. (58)	5	......

Teachers' Course in Applied Science.

First Term.		Second Term.
Subjects.	Credits.	Credits.
Engl. IV, Mod. Engl. Prose (66)	2	1
Oral Exp. III, Debating (66)	1	1
Hist. I, Industrial (65)	2	3
Psychology I, (72)	3	
Mil. S. and T. I, Drill (69)	[1]	[1]
or		
Physical Training	[1]	[1]
Elective	5	5
Subjects not selected for the option to be chosen.		
Options: A, B, C.		
One of these must be chosen.		
A. Chemistry:		
V, Organic (Adv.)(48)	3 [1]	......
VI. Organ. Lab. (48)		[3]
VIII, Quant. Anal. (49)	[3]	[4½]
XI. Mineralogy (49)		[1½]
XXI, Reports and Dis. (49)	1	1
		10
B. Biology	7	
[Botany (45) and Zoöl. (72)]		10
C. Agriculture (39)	7	

Home Economics.

First Term.		Second Term.
Subjects.	Credits.	Credits.
Engl. IV, Mod. Engl. Prose (66)	2	1
Oral Exp. III, Debating (66)	1	1
Hist. I, Industrial (65)	2	3
Psychology I (72)	3	
Physical Education	1	1
Chem. XIX, Physiological (49)	2	2
Zoöl. VII, Vertebrate Anat. (73)	1 [2]	......
Zoöl. VIII, Histol. and Embry. (73)		1 [2]
Home Economics:		
VIII, Food Supplies, etc. (53)	2 [1]	......
IX, Public Hygiene (53)	1	......
X, Textiles (53)		2
XI, Child Hygiene (53)		2
Options: A, B, C.		
One of these must be chosen.		
A. Teachers' Option:		
Education I, History (54)	3	......
Education II, Principles (54)		2
Home Ec. XV, History (53)		2
B. Agriculture:		
Agr. VII, Farm Man. (41)		2
An. Hus. VII, Dairy Prac. (42)	1 [1½]	......
Hort. II, Veg. Gard. (44)	2	......
C. Elective	3	4

Senior Year.

Senior Year.

Agriculture.

First Term. Subjects.	Credits.	Second Term. Credits.
Economics I, Pol. Econ. (51).		
History II, Civ. Gov't (65).		
Engl. V, Mod. Engl. Poetry (66).		
Oral Exp. IV, Oratory (66)	5	5
Thesis	3	3
Mil. S. and T. I, Drill (69)	[1]	[1]
Agr. X, Agric. Experimentation (41)	3	......
Agr. XI, Plant Breeding (41)		5
An. Hus. VI, Feeding (42)	3	......
An. Hus. X, Vet. Med. (43)		3
Elective	7	7

Engineering.

First Term. Subjects.	Credits.	Second Term. Credits.
Economics I, Pol. Ec. (51)		
History II, Civ. Gov't (65)		
Engl. V, Mod. E. Poet. (66)		
Oral Exp. IV, Oratory (66)	5	5
Thesis	3	3
Mil. S and T. I, Drill (69)	[1]	[1]
Options: A, B, C, D.		
One of these must be chosen.		
A. Mechanical Engineering:		
XVII, XVIII, Exp. Eng. c. d. (59)	2 [2]	[2]
XIX, Heat. and Vent. (59)		2
XX, Machine Design (59)	[3]	[3]
XXI, Power Pl. and Des. (60)	[3]	[2]
Phys. IV, Theory El. Meas. (71)	1½	......
Phys. V, El. Meas. (71)		
Phys. VI, Photo. Meas. (71)	[1½]	......
E. Eng. I, II, Dir. Cur. (61)	3	[3]
E. Eng. V. The. Alt. Cur. (61)		1½
E. Eng. IX, El. Illum. (61)		1½
B. Electrical Engineering:		
V, The. Alt. Cur. (61)	3	3
VI, Alt. Cur. Meas. (61) Phys. VII, El. Meas. (71)	[3]	[3]
VII, Des. El. Machin. (61)		[3]
VIII, Telephone Eng. (61)	1	......
X, Transmiss. Energy (61)	2	1
XI, Elect. Rail. Eng. (62)	2	......
M. Eng. XVII, Exp. Eng. c. (59)	2 [2]	......
C. Civil Engineering:		
VI, Bridge Details (63)	[1]	......
VII, VIII, Bridge Anal., Design (63)	2	[3]
IX, Masonry Const. (63)	2 [1]	......
X, Rein. Concrete (64)		2
XI, Sewerage (64)	2	......
XII, Water Supply (64)		3
XIII, Tunneling (64)		1
XIV, Contracts, Spec. (64)		2
M. Eng. XVII, Exp. Eng. c. (59)	2 [2]	......
M. Eng. XVIII, Exp. Eng.d. (59)		[2]
D. Chemical Engineering:		
Chem. V, Organic (Adv.) (48)	3 [1]	......
Chem. XI, Determ. Min. (49)		[1½]
Chem. XIII, Metall. (49)	2	......
Chem. XVI, XVII, Indus. (49)		4 [3]
Chem. XVIII, Assaying (49)		[2]
Chem. XXI, Reports, Dis. (49)	3	1
M. Eng. XII, Mechanism (58)	3	......

Teachers' Course in Applied Science.

First Term. Subjects.	Credits.	Second Term. Credits.
Economics I, Pol. Econ. (51).		
History II, Civ. Gov't (65)		
Engl. V, Mod. Engl. Poetry (66).		
Oral Exp. IV, Oratory (66)	5	5
Thesis	3	3
Mil. S. and T. I, Drill (69)	[1]	[1]
or		
Physical Training	[1]	[1]
Education I, Hist. of Ed. (54)	3	......
Education II, Principles (54)		2
Education III, Methods (54)	2	......
Options: A, B, C.		
One of these must be chosen.		
A. Chemistry:		
V, Organic (Adv.) (48)	3 [1]	......
XI, Determ. Min. (49)		[1½]
XVI, Industrial (49)		4
XVII, Industrial (49)		[3]
XXI, Reports and Dis. (49)	3	1
B. Biology:		
[Botany (46) Zoölogy (72)]	7	9
C. Agriculture (39)	7	9

Home Economics.

First Term. Subjects.	Credits.	Second Term. Credits.
Economics I, Pol. Econ. (51).		
History II, Civ. Gov't (65).		
Engl. V, Mod. Engl. Poetry (66).		
Oral Exp. IV, Oratory (66)	5	5
Thesis	3	3
Physical Education	1	1
Chemistry X, Food Anal. (49)	[2]	[2]
Home Economics:		
XII, Household Art (53)	2	......
XIII, Study of Family (53)	2	......
XIV, Household Adm. (53)		3
Options: A, B, C.		
One of these must be chosen.		
A. Teachers' Option:		
Education III, Methods (54)	2	......
Education IV, Practicum (54)		4
Home Ec. XVI, Teaching of H. Ec. (53)	1	......
B. Agriculture:		
An. Hus. XII, Poultry (43)	[1]	......
Hort. III, Fruit Culture (44)	2	......
Hort. VI, Floriculture (44)		1 [1]
Hort. XIII, Landscape Gard. (45)		2
C. Elective	3	4

AN APPROACH TO THE COLLEGE.

Courses of Study Leading to a Certificate.

The only scholarship requirement for admission to the Short Courses in Agriculture, Mechanic Arts, and Domestic Science is a common-school education. The age for admission to all four courses must be at least sixteen years. The courses lead to a certificate.

Short Course in Agriculture.

FIRST YEAR.

First Term.		Second Term.
Subjects.	Credits.	Credits.
Engl. A. Elementary (66)	5	5
Math. C, D. Arithmetic, Algebra (68)	5	5
Bot. A. Plant Life (46)	1 [2]	1 [2]
Zoöl. A. Elementary (73)	2 [2½]	......
Agr. A. Soils, Fertilizers (41)		3 [1]
Hort. A. Vegetable Gardening (45)		3
An. Hus. A. Breeds and Care (43)	2	......
An. Hus. B. Stock Judging (43)	[2]	......
Woodwork I. Bench and Lathe (72)	[1½]	......
Woodwork H. Farm Buildings (72)	[1]	......
Mil. S .T. I. Drill (69)	[1]	[1]

SECOND YEAR.

Engl. B. Elementary (66)	3	3
Math. F. Geometry, Trigonometry (68)	4	4
Chem. A. Plant and Animal (50)	3 [1]	3 [1]
Agr. B. Crops and Rotations (41)	3	......
Agr. C. Management and Accounts (41)		3
An. Hus. D. Stock Feeding (43)	2	......
An. Hus. C. Dairy Practice (43)	[1]	......
An. Hus. E. Breeding (43)		2
An. Hus. F. Poultry (43)		[1]
Hort. B. Fruit Culture (45)	2	2
Agr. D. Farm Machines (41)		
M. Eng. J. Forging, Machine Shop (60)	[2]	[2]
Mil. S. T. I. Drill (69)	[1]	[1]

Short Course in Mechanic Arts.

FIRST YEAR.

First Term.		Second Term.
Subjects.	Credits.	Credits.
Engl. A. Elementary (66)	5	5
Math. C, D. Arithmetic, Algebra (68)	5	5
M. Eng. I. Mech. Drawing (57)	[3]	[3]
M. Eng. II. Forge and Foundry (57)	[3]	......
M. Eng. III. Pattern Making (57)		[3]
M. Eng. VII. Machine Shop (57)	[3]	[3]
M. Eng. D. Mechanism (60)	3	3
Mil. S. T. I. Drill (69)	[1]	[1]

SECOND YEAR.

Engl. B. Elementary (66)	3	3
Math. F. Geometry, Trigonometry (68)	4	4
M. Eng. V. Descriptive Geometry (57)	3	......
M. Eng. VI. Mech. Drawing (57)		[2]
M. Eng. XIV. Machine Shop (58)	[3]	[3]
M. Eng. E. Engineering Theory (60)	5	5
Physics A. Elementary (72)	3 [1]	3 [1]
Mil. S. T. I. Drill (69)	[1]	[1]

Short Course in Domestic Science.

FIRST YEAR.

First Term.		Second Term.
Subjects.	Credits.	Credits.
Engl. A. Elementary (66)	5	5
Math. C, D. Arithmetic, Algebra (68)	5	5
Bot. A. Plant Life (46)	1 [2]	1 [2]
Zoöl. A. Elementary (73)	2 [2½]	......
Dom. Sci. A. Household Technique (54)	1 [2½]	1 [2½]
Dom. Sci. B. Care of House (54)		2 [1]
Dom. Sci. C. American Home (54)		2
Physical Training	[1]	[1]

SECOND YEAR.

Engl. B. Elementary (66)	3	3
Math. F. Geometry, Trigonometry (68)	4	4
Chem. A. Plant and Animal (50)	3 [1]	3 [1]
Dom. Sci. D. Foods (54)	[2]	[2]
Dom. Sci. E. Management of House (54)	3	3
Dom. Sci. F. Hygiene (54)	2	2
Physical Training	[1]	[1]

Departments of Instruction.

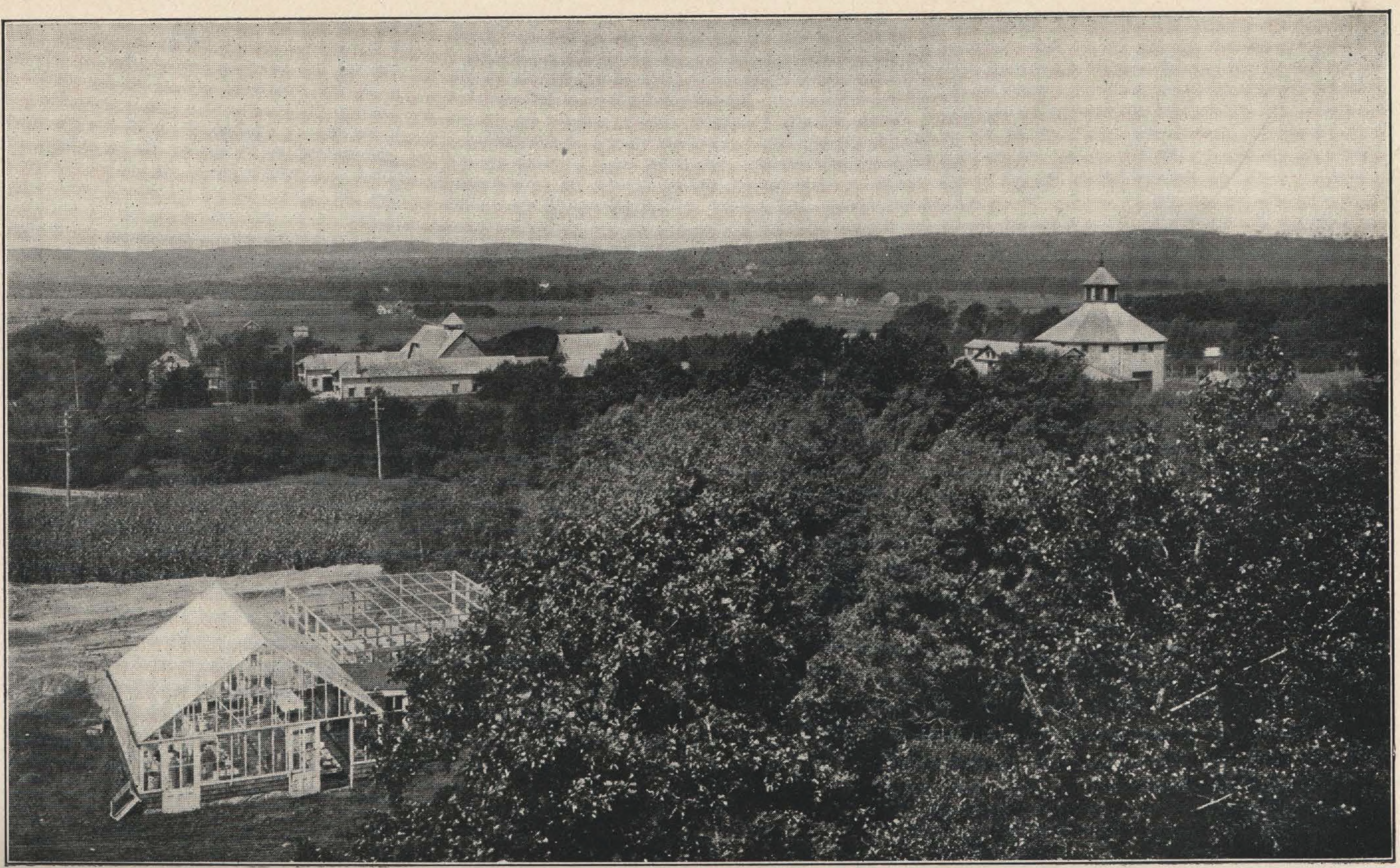
The following subjects are offered in the different departments. All subjects in the departments of instruction preceded by a Roman numeral count towards the degree of B. S. All subjects preceded by a capital letter lead to a certificate.

Agriculture.

PROFESSOR ADAMS, MR. BURDICK, MR. MALLETTE, MR. LAMBERT.

The instruction given in this subject is grouped under the three heads—agronomy, animal husbandry, and horticulture. The aim is to give such theoretical and practical training in the fundamentals of agriculture as will enable those who take this work to fill positions of trust and responsibility, either as owners of their own farms, managers of estates, or along other lines of agricultural activity.

That the graduates from this department may be fitted to take up the work as outlined above, all students registering for a degree in agriculture will be required to show a certain familiarity with the ordinary operations of the farm before such degree is given. In order that those students who come from the cities and towns, and are not familiar with the practical operations of the farms, may receive training in this work, opportunity for such instruction will be offered by the different departments during the college year. No college credits will be given for such work. As a rule, however, it will be much better for the students to spend one or two summers upon farms in order to get this training than to attempt to obtain the proficiency necessary by working only at the college during the college year. Persons taking practical work upon farms during the summer vacations will be required to furnish a certificate from their employers stating the time spent on the farm and the kind



A VIEW TOWARD THE NORTHWEST.

and amount of work accomplished. Special attention must be given to that branch of agriculture which the student is electing in the regular course.

AGRONOMY.

The instruction in agronomy begins the first term of the Sophomore year, when a study is made of the forage plants. Following this work are subjects dealing with the other field crops and their uses as food for man and beast.

The business side of farm life is given attention in the subjects treating of farm equipment and management. Work with farm machinery is a laboratory course, in which the students are taught how to care for, repair, and operate modern farm machinery. In the Senior year there is instruction in plant breeding, a subject which is of the utmost importance to one who would make the most of the opportunities in crop production. Instruction in agricultural experimentation deals largely with the application of the results which have been obtained by the experiment stations, to the practical problems of the farm.

The equipment of the department includes the college farm and barns; also the farm machinery, consisting of a good line of tillage implements, fertilizer distributors, grain drill, and harvesting machinery. A well-equipped blacksmith shop is also provided.

Students have the advantage of the field experiments which are being conducted by the experiment station upon fertilizer problems and with various rotations.

Subjects.

II. Forage Crops.—History and development of the plants used for forage; silage, methods of construction of silos. *Two recitation credits per week, second term. Required of Sophomores in Agriculture.*

III. Soils and Fertilizers.—Origin and constituents of soils; texture, moisture, drainage, methods of tillage. Farm manures, artificial manures, composition and use; formulas for various crops. *Three recitation and one laboratory credits per week, first term. Required of Juniors in Agriculture.*

IV. Farm Crops.—Origin and history; production and place in the rotation of clovers, grasses, and root crops. *Three recitation and one laboratory credits per week, second term. Required of Juniors in Agriculture.*

V. Farm Equipment.—Selection and equipment of farms, buildings, fences, roads, water supply, farm power, machinery. *Two recitation credits per week, second term. Option for Juniors in Agriculture.*

VI. Farm Machinery.—Development of farm machinery, methods of construction, function, and operation. *Two recitation and one laboratory credits per week, second term. Option for Juniors in Agriculture.*

VII. Farm Management.—Discussion of agricultural methods, choice of a farm, capital, marketing, types of farming, accounts. *Two recitation credits per week, second term. Required of Juniors in Agriculture.*

VIII. Farm Management (advanced).—Individual problems of farm management are assigned. Abandoned farms will be visited and a critical study made of the existing conditions. *Two recitation credits per week, first term. Option for Seniors in Agriculture.*

IX. Literature.—History of agricultural and horticultural literature; a study of the different types of agricultural literature as illustrated by ancient and modern authors. Reports upon special topics. *Two recitation credits per week, second term. Option for Seniors in Agriculture.*

X. Agricultural Experimentation.—Objects, methods, and results of agricultural experimentation. A study of federal and state aid to agriculture as shown in the work of the United States Department of Agriculture and the Experiment Stations. *Three recitation credits per week, first term. Required of Seniors in Agriculture.*

XI. Plant Breeding.—A discussion of the development of plants under cultivation; with reference to heredity, environment, variation, and selection. *Five recitation credits per week, second term. Required of Seniors in Agriculture.*

XII. Thesis.—*Required of Seniors in Agriculture.*

A. Soils and Fertilizers.—An elementary course upon the origin and nature of soils. Fertilizers; natural and artificial manures; preparation and use; fertilizer arithmetic. *Three recitation and one laboratory credits per week, second term. Required of Short-Course students in Agriculture, first year.*

B. Crops and Rotations.—Methods of culture and uses of the grasses, clovers, cereals, and root crops. Rotation for the various types of farms. *Three recitation credits per week, first term. Required of Short-Course students in Agriculture, second year.*

C. Farm Management and Accounts.—An elementary course upon the principles of farm management, equipment, and farm bookkeeping. *Three recitation credits per week, second term. Required of Short-Course students in Agriculture, second year.*

D. Farm Machinery.—Care and repair of farm implements. *Two laboratory credits for twelve weeks. Required of Short-Course students in Agriculture, second year.*

ANIMAL HUSBANDRY.

Instruction in animal husbandry is so arranged as to furnish practical as well as theoretical training in the selection, care, and management of the live stock on the farm. Instruction commences with a brief study of breeds, and care of poultry in the first term of the Freshman year. This course, together with the judging of stock in the second term, aims to provide a large amount of practical work in combination with the theoretical. In the Junior year, attention is directed to dairying, and the breeding and feeding of animals; and in the Senior year the work includes judging, care of animals, and veterinary practice. In veterinary practice the student is taught to diagnose and prescribe for the common ailments of farm animals.

The equipment is particularly strong on the poultry side. The college poultry plant enables one to obtain a large amount of practical experience in incubation, brooding, and management. In addition to the poultry in the college yards, the students have opportunity to follow the investigations with turkeys which are now being conducted by the experiment station.

In addition to the subjects mentioned below, there is a short course in poultry keeping during the winter months, full information concerning which may be obtained by addressing the president of the college.

Subjects.

I. Stock Judging.—Scoring and comparison judging of the various types of horses, cattle, sheep, and swine. *Two laboratory credits per week, second term. Required of Freshmen in Agriculture.*

II. Advanced Judging.—Practice in judging and a detail study of animal conformation. *Two laboratory credits per week, first term. Option for Seniors in Agriculture.*

III. Breeds.—History and characteristics of the principal breeds of farm animals. *Two recitation credits per week, second term. Required of Freshmen in Agriculture.*

IV. Principles of Breeding.—A study of the science and art of animal breeding. *Three recitation credits per week, second term. Option for Juniors in Agriculture.*

V. Management of Pure-Bred Herds, Flocks, and Studs.—Housing, feed, and management. Fitting animals for sale and for the show ring. *Two recitation credits per week, second term. Option for Seniors in Agriculture.*

VI. Feeding.—Principles of animal nutrition. Feeding standards. Rations. *Three recitation credits per week, first term. Required of Seniors in Agriculture.*

VII. Dairy Practice.—Lectures and laboratory practice with Babcock Test and in handling milk and making butter on the farm. *One recitation and one and one-half laboratory credits per week, first term. Required of Juniors in Agriculture.*

VIII. Dairy Practice.—Advanced work. Pasteurization. Starters. Testing for adulteration. Acidity. Moisture. *One recitation and one laboratory credit per week, second term. Option for Seniors in Agriculture.*

IX. Research and Literature.—A study of important results in live-stock research. Herd-book study. *Three recitation credits per week, first term. Option for Seniors in Agriculture.*

X. Veterinary Medicine.—Combating disease from the farmer's standpoint. Obstetrics. Injuries. *Three recitation credits per week, second term. Required of Seniors in Agriculture.*

XI. Farm Buildings.—Plans, location, and estimate on the various farm buildings. *Two laboratory credits per week, second term. Option for Juniors in Agriculture.*

XII. Poultry Craft.—A brief study of breeds, care, and management of all classes of fowls. *One laboratory credit per week, first term. Required of Freshmen in Agriculture.*

XIII. Judging Poultry.—Practice in scoring and judging all classes of fowls. *Two laboratory credits per week, second term. Option for Seniors in Agriculture.*

XIV. Thesis.—Original Investigation. *Required of Seniors electing Animal Husbandry.*

A. Breeds and Care.—Breeds of horses, cattle, sheep, and swine. Housing, care, and management of farm animals. *Two recitation credits per week, first term. Required of Short-Course students in Agriculture, first year.*

B. Stock Judging.—Judging of the various classes of animals, and their adaptability for different purposes; as cattle for milk or beef production, horses for driving or draft. *Two laboratory credits per week, first term. Required of Short-Course students in Agriculture, first year.*

C. Dairy Practice.—Babcock Test for dairy products, production of sanitary milk, and butter making. *One laboratory credit per week, first term. Required of Short-Course students in Agriculture, second year.*

D. Stock Feeding.—Principles of nutrition, compounding of rations. *Two recitation credits per week, first term. Required of Short-Course students in Agriculture, second year.*

E. Breeding and Veterinary Practice.—A study of the principles of breeding, selection, heredity and variation. Methods of treating common diseases of farm animals. *Two recitation credits per week, second term. Required of Short-Course students in Agriculture, second year.*

F. Poultry Breeds and Care.—A study and comparison of the different breeds of poultry, care of incubators and brooders, methods of feeding for the production of meat and eggs. *One laboratory credit per week, second term. Required of Short-Course students in Agriculture, second year.*

HORTICULTURE.

The aim of the instruction in horticulture is to help the student to understand the practical and scientific problems which arise in the various lines of work included under this subject.

The headquarters of the department are in the new horticultural building, which was erected in 1906. The main building contains the office and recitation rooms, together with photographic rooms. Attached to this building are greenhouses of modern construction, containing over 8,000 square feet under glass, 3,000 square feet of which is used by the experiment station for fertilizer experiments. The remainder is devoted to college work, and thus affords an excellent opportunity to become familiar with the growth of plants under glass. The land devoted to the department comprises the college gardens; and the fruit orchards, containing over 150 varieties of fruit, which afford an excellent opportunity for the study of apples and pears especially. There is also a small vineyard. A collection of flowering shrubs enables the student in landscape gardening to study, in the natural state, the material used in this work.

Subjects.

I. Propagation of Plants.—Seedage, methods of seed testing; cuttage, hard and soft wood cuttings; layerage and graftage. *One recitation and one laboratory credit per week, second term. Required of Freshmen in Agriculture.*

II. Vegetable Gardening.—Methods of growing and marketing vegetables. *Two recitation credits per week, first term. Required of Sophomores in Agriculture.*

III. Fruit Culture.—Principles and practice of orcharding and growing of bush fruits. *Two recitation credits per week, first term. Required of Juniors in Agriculture.*

IV. Spraying and Pruning.—Spray mixtures, preparation and use; fungicides; insecticides; spraying machinery; methods of pruning different classes of trees and shrubs. *One laboratory credit per week, second term. Required of Sophomores in Agriculture.*

V. Greenhouse Construction and Management.—Construction and heating of greenhouses, preparation of plans, watering, ventilating. *One recitation and two laboratory credits per week, second term. Option for Juniors in Agriculture.*

VI. Floriculture.—A study of greenhouse plants; annuals; herbaceous perennials; bulbs for bedding and forcing. *One recitation and one laboratory credit per week, second term. Option for Seniors in Agriculture.*

VII. Vegetable Forcing.—Methods of growing vegetables under glass; in houses, hotbeds, and cold-frames. *Two recitation credits per week, second term. Option for Juniors in Agriculture.*

VIII. Literature of Horticulture.—See Agronomy IX.

IX. Investigation.—Special problems upon subjects in which the student is particularly interested. *Option for Seniors in Agriculture.*

X. Varieties of Cultivated Fruits.—Classification and description of orchard fruits. *Two recitation and one laboratory credits per week, first term. Option for Seniors in Agriculture.*

XI. Advanced Vegetable Gardening.—Study of varieties for special purposes; market-garden rotations and equipment. *One recitation credit per week, first term. Option for Seniors in Agriculture.*

XII. Plant Breeding.—See Agronomy XI.

XIII. Landscape Gardening.—The principles underlying landscape gardening, as applied to the development of home and school grounds. *Two recitation credits per week, second term. Option for Seniors in Agriculture and Home Economics.*

A. Vegetable Gardening.—Methods of growing vegetables; hotbed and cold-frame management; garden rotations. *Three recitation credits per week, second term. Required of Short-Course students in Agriculture, first year.*

B. Fruit Culture.—The location of orchards and fruit plantations; methods of tillage, pruning, spraying for insects and fungous diseases. Varieties for home and market. *Two recitation credits per week, throughout the year. Required of Short-Course students in Agriculture, second year.*

Botany.

PROFESSOR MERROW.

The aim of the department is to give a general knowledge of plant life, followed by subjects of an economic nature. The college is well located for carrying on this line of work. The native flora is extensive, and an abundance of material is furnished by the cultivated plants of the gardens and fields of the college farm. The greenhouses supply fresh material for winter use, and the herbarium of 4,000 specimens is a useful reference collection. The laboratory is equipped with dissecting and compound microscopes, a microtome, paraffin bath, and simple physiological apparatus. Charts and models are provided for lecture demonstrations. A good working library, including several American and foreign periodicals, is an important factor in the outfit for botanical instruction.

Subjects.

I. General Botany.—A study of common plants, their structure, physiology, evolution, and adaptation to environment. The work includes a brief study of molds, yeasts, and bacteria, designed as an introduction to problems in which these organisms play a part. *Two laboratory credits and one recitation credit per week, throughout the year. Required of Freshmen in Agriculture, Applied Science, and Home Economics.*

II. Economic Botany.—The systematic botany of crops and weeds. *Two laboratory credits and one recitation credit per week, first term. Required of Sophomores in Agriculture and Applied Science.*

III. Trees and Shrubs.—The determination of native and introduced trees and shrubs in summer and winter condition. *One laboratory or field credit per week, throughout the year.* May be elected by students having a minimum of six credits in Botany.

IV. Forestry.—*Two recitation credits per week, second term. Required of Juniors in Agriculture. Elective in Applied Science.*

V. Histology.—Seed plants are studied by the usual histological methods of imbedding, sectioning, and staining. *Two and one-half laboratory credits and one recitation credit per week, first term. Elective.*

VI. Pathology.—Diseases caused by parasitic fungi and the remedies for them. *Two and one-half laboratory credits and one recitation credit per week, second term. Elective.*

A. Plant Life.—Elementary Agricultural Botany. *Two laboratory credits and one recitation credit per week, throughout the year. Required in the first year of the Short Courses in Agriculture and Domestic Science.*

Chemistry.

DR. LEIGHTON, MR. SMITH.

Instruction in this department begins in the Freshman year with experimental lectures, recitations, and laboratory practice in general and descriptive chemistry. The work is designed to give a thorough elementary knowledge of theoretical and descriptive inorganic chemistry, including the principal technical processes, and a brief account of the carbon compounds. As much attention as is practicable in a general course is given to the applications of the science to the problems of life. Two periods per week for the year are devoted to the lectures and recitations, and three hours per week for a half-year to the practical work in the laboratory, where the student has an opportunity to verify some of the chemical theories and to become familiar with substances and their chemical behavior. During the second half of this year the laboratory period is devoted to quantitative analysis, which continues through the first half of the Sophomore year. The subject is taught in part by means of recitations and lectures, but mainly by work in the laboratory. Students are required to complete a systematic course in basic and acid analysis, and to analyze correctly a number of alloys, salts, and minerals. Quantitative analysis is taught mainly by laboratory practice, but sufficient time is devoted to lectures and recitations to teach thoroughly the fundamental principles involved. The work comprises gravimetric and volumetric analysis, and the quantitative determination of salts, alloys, ores, minerals, and commercial and food products. In the course in technical gas analysis the student analyzes such gases as air, and illuminating and chimney gases. The work in assaying is designed to familiarize the student with the practical methods of sampling and assaying gold, silver, and lead ores. Determinative mineralogy, which includes blowpipe analysis and crystallography, is taught by recitations and laboratory work. The student learns the physical properties of the common minerals, and their identification. The above subjects cover a comprehensive study of analytical chemistry, and are intended to give the student such theoretical and practical knowledge as to prepare him for analytical work of any kind.

The study of organic chemistry begins with a short course, designed to cover the general principles and methods, and to include a description of the more important compounds. The subject is continued by those who wish to specialize in chemistry in a more extended course covering the aromatic series and the chemistry of the dyestuffs, and accompanied by laboratory work in organic preparations and analysis. The theoretical and basic principles of chemistry, with their general application, are thoroughly studied by recitations, lectures, and laboratory work in the course in physical chemistry.

The descriptive side of industrial chemistry, which comprises a general survey of the technical applications of chemical principles to the arts and industries, is studied by recitation work; while practical technical operations, such as textile coloring, suited to the needs of the individual student, are studied by laboratory practice. The principles and practice of the industrial preparation of iron, steel, and other metals from their ores are taught by recitation and lecture work in the course in metallurgy.

Agricultural chemistry, required of agricultural students in the Junior year, embodies the chemistry of soils and fertilizers, also the chemistry involved in the changes which take place during the growth of animals and plants, as well as in the storage or manufacture of the ordinary farm products.

Subject XXI is intended to familiarize the student with the general field of chemical literature, and to inculcate the habit of keeping up with the recent advance in chemical science by reports and discussion of articles appearing in the chemical journals. This course is preparatory for thesis work, which involves original investigation.

The laboratory is supplied with water, gas, and compressed air at each desk; it is also well equipped with apparatus for the subjects mentioned below. Among the more important pieces of apparatus are a polariscope, microscope, sodium press, hot-air engine, five analytical balances, one assay balance, filter press, Wheatstone bridge, combustion furnace, bomb furnace, assay muffle, crucible and roasting furnaces, ore crusher and grinder.

A good working library, containing a large number of German, French, and English chemical journals, is also accessible.

Subjects.

I. General Chemistry.—*Two recitation and one and one-half laboratory credits per week, first term. Required of Freshmen in all courses.*

II. General Chemistry and Qualitative Analysis.—*Two recitation and one and one-half laboratory credits per week, second term. Required of Freshmen in all courses.*

III. Qualitative Analysis.—Basic and acid analysis; analysis of salts, industrial and natural products. *Three laboratory credits per week, first term. Required of Sophomores in all courses.*

IV. Organic Chemistry.—*Three recitation and one laboratory credits per week, second term. Required of Sophomores in Chemical Engineering, Home Economics, Agriculture, and Applied Science. Elective for others who have completed Chemistry III.*

V. Organic Chemistry (advanced).—To be given alternate years. Given next in 1909. *Three recitation and one laboratory credits per week, first term. Required in Chemical Engineering. Elective for others who have completed Chemistry IV.*

VI. Organic Chemical Laboratory.—*Three laboratory credits per week, second term. Required of Juniors in Chemical Engineering. Elective for others who have completed Chemistry V.*

VII. Quantitative Analysis.—Gravimetric and Volumetric Analysis. Analysis of minerals, ores, alloys, and industrial products. *Three laboratory credits per week, first term; eight laboratory credits per week, second term. Required of Juniors in Chemical Engineering. Elective for others who have completed Chemistry III.*

VIII. Quantitative Analysis.—Like VII, but requires less time. *Three laboratory credits per week, first term; four and one-half laboratory credits per week, second term. Elective for those who have completed Chemistry III.*

X. Quantitative Analysis.—Food Analysis. *Two laboratory credits, throughout the year. Required of Seniors in Home Economics. Elective for others who have completed Chemistry IV.*

XI. Determinative Mineralogy.—To be given alternate years. Given next in 1910. *One and one-half laboratory credits per week, second term. Required in Chemical Engineering. Elective for others who have completed Chemistry III.*

XII. Physical Chemistry.—To be given alternate years. Given next in 1910. *Three recitation and one laboratory credits per week, first term. Required in Chemical Engineering. Elective for others who have completed Chemistry III.*

XIII. Metallurgy.—*Two recitation credits per week, first term. Required of Seniors in Chemical Engineering. Elective for others who have completed Chemistry II.*

XIV. Agricultural Chemistry.—*Three recitation and one laboratory credits, first term. Required of Juniors in Agriculture.*

XV. Gas Analysis.—To be given alternate years. Given next in 1911. *One and one-half laboratory credits per week, second term. Required in Chemical Engineering. Elective for others who have completed Chemistry III.*

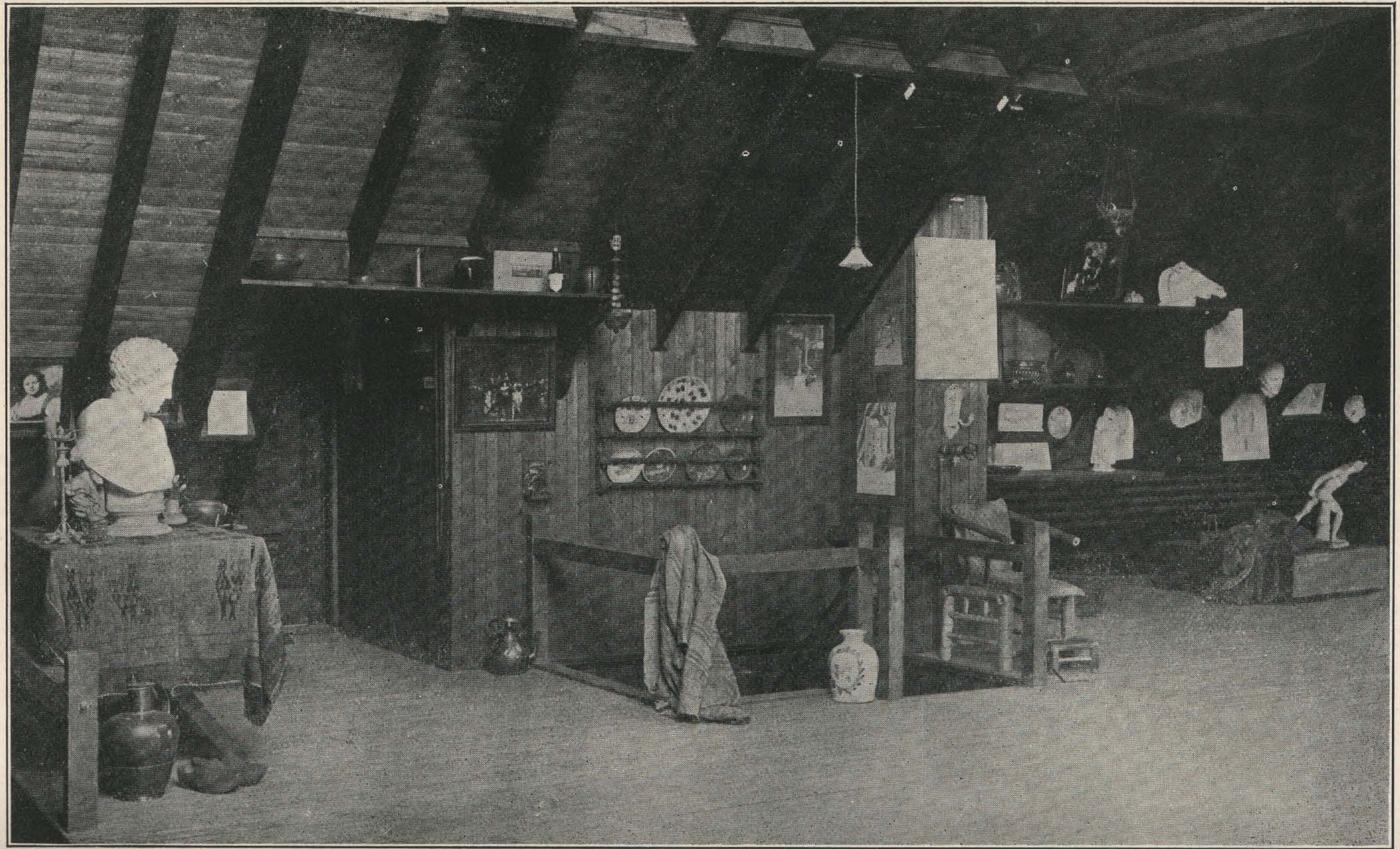
XVI. Industrial Chemistry.—*Four recitation credits per week, second term. Required of Seniors in Chemical Engineering. Elective for others who have completed Chemistry IV.*

XVII. Industrial Chemistry.—The work under this subject may be varied to suit the needs of individual students; including such subjects as technical analysis and textile coloring. *Three laboratory credits per week, second term. Required of Seniors in Chemical Engineering. Elective for those who take Chemistry XVI.*

XVIII. Assaying.—*Two laboratory credits per week, second term. Required of Seniors in Chemical Engineering.*

XIX. Physiological Chemistry.—*Two exercises per week, throughout the year. Required of Juniors in Home Economics.*

XXI. Reports and Discussion of Chemical Subjects and Recent Investigations.—*One hour per week, for a year; required of Juniors in Chemical Engineering. Three hours the first term, and one hour the second term; required of Seniors in Chemical Engineering.*



THE STUDIO.

XX. Thesis.—*Required of Seniors in Chemical Engineering and those who take the Chemical option in Applied Science.*

A. Chemistry of Plant and Animal Life.—*Three recitation and one laboratory credits per week. Required of Short-Course students in Agriculture, second year.*

Freehand Drawing.

MISS ELDRED.

The aim of the subjects described below is to supply the practice in drawing necessary for subsequent work in the science laboratories, and to give some knowledge of the elements of art and some appreciation of the beautiful in art and nature. In the agricultural course and the first term of the science courses, the work comprises outline drawing in pencil from plant and animal forms. The work of the second term in the science courses is planned upon broader lines, and includes, especially for the course in home economics, some attention to the principles of design. The architectural drawing is arranged to accompany the home-economics work in house construction, affording students an opportunity to work out under supervision the plans and details of construction considered in that course. In the following year the home-economics students take up during the second term the consideration of color,—the principle of color harmony and the use of color in design and decoration. The object of this work is to develop appreciation of color and to enable the student to exercise a more intelligent and sensitive discrimination in its use. The subject, history of art, aims to give some familiarity with the greatest achievements of past and present in architecture, sculpture, and painting. Following this general survey, the students in home economics give special consideration to the history of domestic architecture, where it is hoped they may find standards of dignity, simplicity, and fitness to which many of the problems of to-day in the same field may well be referred. These latter subjects are given mainly by means of lectures and the study of casts and photographs. The department has a considerable equipment of illustrative material of this kind, including a collection of about one hundred and fifty casts and over three hundred photographs of folio or larger size, with many smaller prints, among them the five hundred University Prints of Greek and Roman sculpture.

Subjects.

II. Pencil Drawing from Objects.—*Two laboratory credits per week, throughout the year; required of Freshmen in Applied Science. One laboratory credit per week, throughout the year; required of Freshmen in Home Economics. Five laboratory credits per week, first term; an option for entering students. One laboratory credit per week, second term; required of Freshmen in Agriculture.*

III. History of Art.—*Two credits per week, first term; one credit per week, second term. Required of Sophomores in Home Economics.*

IV. Color Problems.—*One laboratory credit per week, second term. Required of Sophomores in Home Economics.*

V. Drawing in Charcoal from Still Life and the Cast.—*Two laboratory credits per week, second term. Elective.*

VI. Pen-and-Ink Drawing, Water-Color, or Pastel.—*Two laboratory credits per week, second term. Elective.*

VII. Modeling.—*Two laboratory credits per week, second term. Elective.*

VIII. Architectural Drawing.—*One laboratory credit per week, throughout the year. Required of Freshmen in Home Economics.*

Economic and Social Science.

PRESIDENT EDWARDS.

Subjects.

I. Political Economy.—Text-book, supplemented by lectures, readings, and essays. The first term is devoted to the general principles of the subject; second term, to consideration of present-day problems. *Five recitation credits per week, first term, first twelve weeks. Required of Seniors in all courses.*

II. Agricultural Economics.—The study of agriculture as an industry, from the point of view of political economy. Includes a study of the agricultural market; transportation of agricultural products; agricultural labor; farm ownership and tenancy; mortgages, etc. *Elective.*

III. Rural Sociology.—Movements of the farm population—causes and results; general social conditions of farmer, such as illiteracy, health, crime, etc.; personal and social traits developed by rural life; means of communication in rural communities; the rural school; agricultural education; the country church; farmers' organizations; federation of rural social forces. *Elective.*

Home Economics.

ACTING PROFESSOR LOOMIS.

The aim of this department is to give both theoretical and practical training in the economic administration of the home. The laboratory is situated in a building by itself, which is finished and furnished in such a manner as to demonstrate the sanitary principles involved in proper kitchen arrangements. It is amply equipped with the most recent scientific cooking-apparatus, inclusive of thermometers, metric scales, different kinds of stoves, and individual utensils. The work in chemistry, biology, etc., is, however, carried on in the laboratories of those departments. There is a good home-economics library, and students are expected to make intelligent use of the main library in reference work, as well as to study those bulletins of the Department of Agriculture and such state reports as deal particularly with the subjects of food and nutrition.

Subjects.

I. House Construction, Sanitation, and Cost.—A study of the house, its construction, situation, and surroundings; heating, lighting, ventilation, water supply, and drainage. *Two recitation and one-half laboratory credits, first term. Required of Freshmen in Home Economics. Open to all college students.*

II. Principles of Selection and Preparation of Food.—The nature and uses of food; its chemical composition, and the changes effected by heat, cold, and fermentation. Methods by which heat is applied to food; study of fuels and cooking-apparatus. *Two laboratory and two recitation credits per week, second term. Required of Freshmen in Home Economics. Prerequisite: Chemistry I.*

III. Household Hygiene.—Cleansing processes; cleaning and care of house, food, and food supplies. Application of bacteriology to care of house and food. *One recitation and one-half laboratory credits per week, second term. Required of Freshmen in Home Economics. Prerequisite: first term Botany I.*

IV. Economic Uses of Food.—Continuation of Subject II, with emphasis on the economic side of the food question. Production, manufacture, and preparation of staple foods; factors affecting cost. *Three laboratory and two recitation credits per week, first term. Required of Sophomores in Home Economics. Prerequisites: Chemistry I, Botany I.*

V. Personal Hygiene.—This course considers the aim of personal hygiene as the maintaining of the most efficient human machine for the life needs of the individual. It endeavors to give and establish ideals of health and efficiency. Includes instruction in first aid to the injured. *One recitation credit per week, throughout the year. Required of Sophomores in Home Economics and of all women Freshmen in other courses.*

VI. Home Decoration.—Continuation of Subject I. A study of the evolution of the house; its adaptation to modern conditions; the principles to be followed in planning, furnishing, and decorating the house from a sanitary and artistic standpoint. *Two recitation credits per week, second term. Required of Sophomores in Home Economics.*

VII. Dietetics.—Principles of diet; relation of food to health; adaptation of food to age, sex, and occupation. *Two laboratory credits per week, second term. Required of Sophomores in Home Economics. Prerequisite: Home Economics II and IV.*

VIII. Food Supplies and Dietaries.—Nutritive and money values of food stuffs; construction of dietaries; adulterations; methods of preservation, etc. *One laboratory and two recitation credits per week, first term. Required of Juniors in Home Economics. Prerequisites: Home Economics VI, Chemistry III and IV.*

IX. Public Hygiene.—Takes up such phases of the subject as have a direct practical bearing on public health and principles of individual and social hygiene. An application of bacteriology to municipal hygiene, water, and food supplies, sewage disposal, etc. *One recitation credit per week, first term. Required of Juniors in Home Economics. Prerequisite: Botany I. Open to all Juniors and Seniors.*

X. Textiles.—A study of fabrics; processes and appliances studied with reference to their historic development; primitive industries; modern processes of manufacture; experimental and laboratory work; dyeing, spinning, and weaving. *Two recitation credits per week, second term. Required of Juniors in Home Economics. Prerequisite: first term of History I.*

XI. Child Hygiene.—A study of the physical development of children; care of infants and young children; school hygiene. *Two recitation credits per week, second term. Required of Juniors in Home Economics. Prerequisite: Psychology. Open to Juniors and Seniors in other courses.*

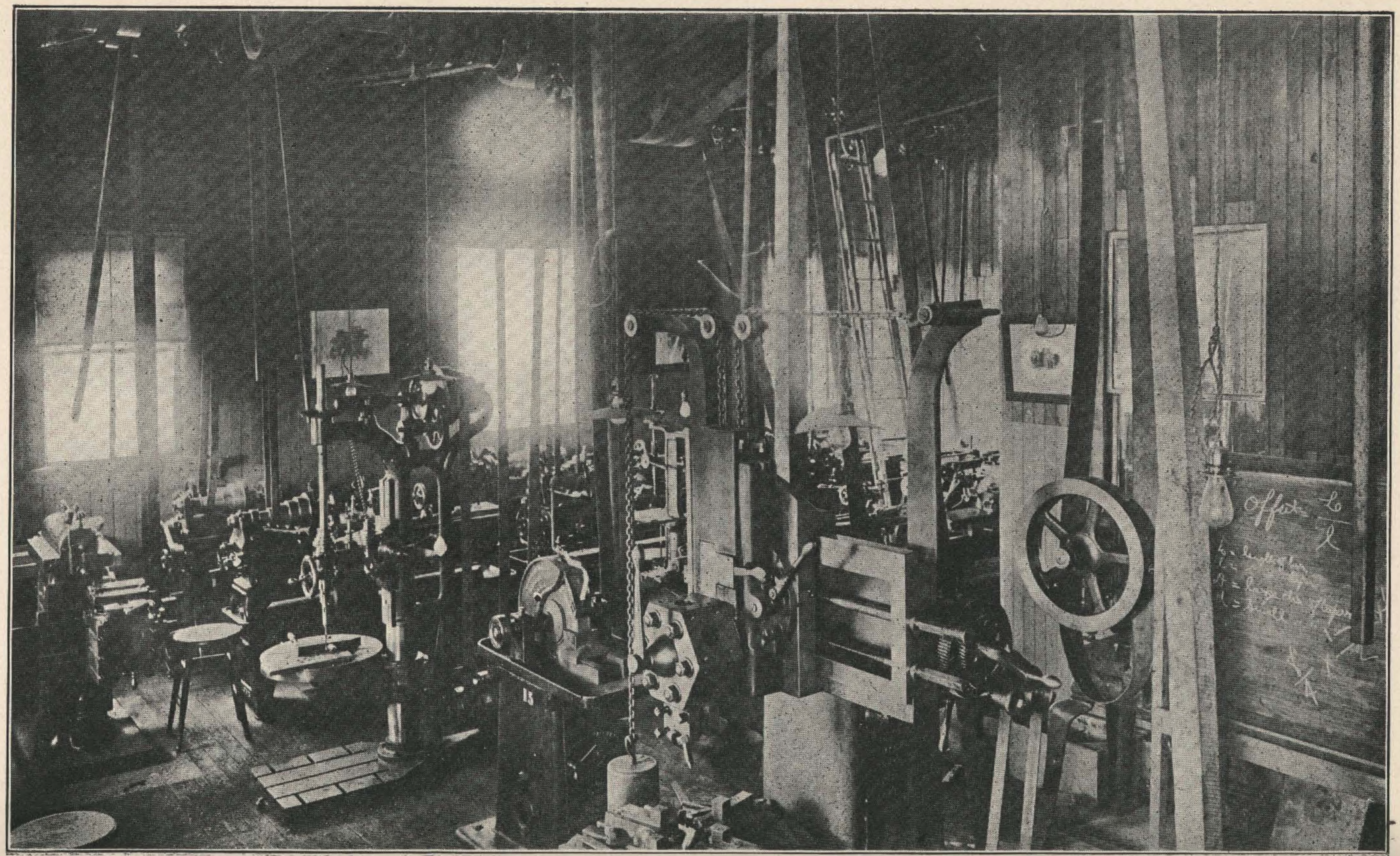
XII. Household Art.—Theory of color and its use in the home; effect of different textiles and their economic use; materials suitable for various uses in the home, and their hygienic properties. *Two recitation credits per week, first term. Required of Seniors in Home Economics. Prerequisites: Freehand Drawing IV, Home Economics I, VI.*

XIII. A Study of the Family.—Development of the domestic institutions; social ethics of the family; legal, industrial, and educational problems of the household. *Two recitation credits per week, first term. Required of Juniors in Home Economics. Open to Juniors and Seniors in other courses.*

XIV. Household Administration.—A study of the administration of the home, inclusive of proper apportionment of income and maintenance of suitable standards. *Three recitation credits per week, second term. Required of Seniors in Home Economics. Prerequisite: Economics I.*

XV. History of Home Economics.—Development of home-economics movement; a study of the work as presented in different types of institutions, and its industrial, educational, and sociologic aspects. *Two recitation credits per week, second term. Required of Juniors in Home Economics. Option A. Open to special students.*

XVI. Teaching of Home Economics.—Purpose and method of the work; courses of study, equipment, etc. *One recitation credit per week, first term. Required of Seniors in Home Economics. Option A.*



MACHINE SHOP,

XVII. Thesis.—This may be a problem in the biological, chemical, physiological, or economic aspect of the work in Home Economics. *Three credits, throughout the year. Required of Seniors in Home Economics.*

DOMESTIC SCIENCE.

A. Household Technique.—This course is planned to give a knowledge of the processes involved in household work. It deals with the handwork of cooking and cleaning; care of rooms; table setting and serving, etc. *Two and one-half laboratory and one recitation credits per week, throughout the first year. Required of Short-Course students.*

B. Care of the House.—Principles of housework; labor-saving appliances; how to clean the house and its furnishings; repairing—the use of varnishes, paints, etc., and how to care for finished surfaces. *One laboratory and two recitation credits per week, second term, first year. Required of Short-Course students.*

C. A Study of the Modern American Home.—Its development, the development of its industries; how its comfort, beauty, and surroundings may be improved. *Two recitation credits per week, second term, first year. Required of Short-Course students.*

D. Foods.—Provides instruction in advanced cooking; special cooking for sick and convalescent; planning of meals; discusses food for different ages and conditions. *Two laboratory credits per week, throughout the second year. Required of Short-Course students.*

E. Management of the House.—Considers the materials, qualities, amounts, and cost of house furnishing and supplies; lessons in marketing. *Three recitation credits, throughout the second year. Required of Short-Course students.*

F. Hygiene.—Study of the living machine, its mechanism and functions; the right use and proper care of the human mechanism; home nursing and emergencies. *Two recitation credits per week, throughout the second year. Required of Short-Course students.*

EDUCATION.

I. History of Education.—Study of the educational ideas and practices of the historical periods as a basis for the interpretation and appreciation of the essential features of modern education. *Three recitation credits per week, first term. Required of Juniors in Home Economics. Option A.*

II. Principles of Education.—The meaning and aim of education; modern educational theories; the biological, physiological, and psychological aspects of education. *Two recitation credits per week, second term. Required of Juniors in Home Economics. Option A.*

III. Methods in Education.—Discussion of the organization and problems of the school; influence of personality of teachers; methods of teaching and study; considerations of subjects of study. *Two recitation credits per week, first term. Required of Seniors in Home Economics. Option A.*

IV. Practicum.—Applied methods of teaching based on actual operations of class and observation work. Practice teaching in different classes. Hours arranged. *Four credits, second term. Required of Seniors in Home Economics. Option A.*

Mechanical Engineering.

Professor Wales, Mr. Eldred.

It is the object of the work in the department of mechanical engineering to turn out broad-gauged, self-dependent men, well trained in engineering theory, familiar with the practical matters of construction and operation, and having some knowledge of the economic relations which the engineer and industrial development bear to modern society. In the endeavor to train men who will touch life, not at one point, but at many, the work of the department is supplemented and rounded out by extended and vigorous courses along the lines of electrical engineering, physics, mathematics, chemistry, English, history, modern language, and political economy. The special work of the department of mechanical engineering divides itself naturally into the following general groups: shop practice, design, steam engineering, and experimental engineering. Each of the above groups is amplified and briefly described below:

Shop Practice.

The object of this work is to give familiarity with principles, operations, possibilities, and management, rather than to develop the greatest dexterity in manipulation. Shop practice extends over three years of the course, and comprises forging and foundry work, pattern making, and machine-tool operation. The shops are exceptionally well equipped with machines and tools of all kinds. In the machine shop are six metal lathes, speed lathes, planer, 16-in. shaper, two drills, two tool grinders, drill grinder, milling machine, punching-press, vertical boring and turning mill, together with the usual assortment of tools and auxiliaries. The pattern shop is provided with lathes, circular saw, band saw, jig saw, dowel machine, surface and buzz planers, etc. Fifteen work-benches fully provided with the small tools of the pattern maker complete the equipment. The forge shop is equipped with the usual anvils, forges, fullers, swages, hardies, etc., while a full stock of patterns, shovels, riddles, flasks, and trowels are provided for the work in foundry practice. Enthusiasm is given to the work by the construction of things of real value—a new machine for the shop, or a piece of apparatus for the laboratory—instead of spending the whole time on worthless "exercises."

Design.

The work along the lines of design extends throughout the four years, beginning with freehand and mechanical drawing and ending with machine design and power-plant design in the Senior year. Leading up to this final work are the terms of mechanical drawing, descriptive geometry, mechanism, valve gears, dynamics of machines, mechanics, strength of materials, hydraulics, and thermodynamics. All the forces of correct theory and the practice of the most successful builders are brought to bear upon the solution of definite, practical problems.

Steam Engineering.

Steam engineering begins in the Junior year and runs through the remainder of the course. A rigorous study of the mathematical theory of thermodynamics supplies the foundation for the study of boilers and engines, design and economy, and the various devices and auxiliaries of the power plant. In the Senior year is considered the particular branch of heating and ventilating. In this year, also, the subject of power plants is taken up, which applies all the previous training in steam engineering, and which brings together and unifies all allied subjects.

Experimental Engineering.

This subject, which extends throughout the Junior and Senior years, is intended to fix the theory developed in all the other lines of work. Instruction is given by means of lectures and laboratory tests. The student becomes familiar with the theory, construction, use, and calibration of the instruments and apparatus used by the engineer, and gains experience in making accurate standard and special tests. The work is divided into four groups: one dealing with the chemical problems of engineering—testing of gases, oils, fuels, feed water, etc.; a second, with general calibration and testing; a third, with the study and tests of structural materials; and the fourth, with general power-plant testing. In power-plant testing the students make the necessary plans and preparations, perform the experimental work, and prepare formal reports, with recommendations for improvement in economy etc. These tests are made not only on the college power-plants, but on those of manufacturing establishments of the state. The equipment for experimental work comprises several boilers and steam engines, large steam pump, hot-air engine, feed, water heaters, several steam and gas engine indicators, steam calorimeters, tanks, scales, injectors, water turbine, hydraulic ram, meters, gauges, 50,000-lb. tension and compression machine, apparatus for oil and gas testing, fuel calorimeter, complete outfit for testing cements and concretes, etc. Throughout the work the greatest stress is laid upon the correct calculation and interpretation of results, and accuracy and self-dependence are developed to the fullest.

Subjects.

I. Mechanical Drawing.—Lettering, freehand sketching, use of drafting tools, geometrical problems, projections, machine parts. *Three laboratory credits, throughout the year. Required of Freshmen in Engineering and First-Year Short-Course students in Engineering. One and one-half laboratory credits, first term. Required of Freshmen in Agriculture.*

II. Forge and Foundry.—Forging, drawing, bending, welding, etc. Principles of moulding, core making, and casting. *Three laboratory credits per week, first term. Required of Freshmen in Engineering and First-Year Short-Course students in Engineering. One laboratory credit per week, first term. Required of Juniors in Agriculture.*

III. Pattern Making.—Use of tools, bench and lathe work, pattern making. *Three laboratory credits per week, second term. Required of Freshmen in Engineering and First-Year Short-Course students in Engineering.*

IV. Elementary Mechanics.—An introduction to the study of applied mechanics, embracing work in forces, resolution and combination, parallel forces, centre of gravity, couples, determination of stresses both analytically and graphically. *Two recitation credits per week, second term. Required of all Sophomores in Engineering.*

V. Descriptive Geometry.—Elementary principles; problems relating to the point, line, plane, cylinder and double curved surfaces of revolution, intersections and developments. *Three recitation credits per week, first term. Required of all Sophomores in Engineering and Second-Year Short-Course students in Engineering.*

VI. Mechanical Drawing.—Detail and assembly drawings, elementary machine design. *Two laboratory credits per week, second term. Required of Sophomores in Mechanical, Electrical and Civil Engineering; also of Second-Year Short-Course students in Engineering.*

VII. Machine Shop.—Hand work in chipping and filing, use of machine tools, construction of machines. *Three laboratory credits per week, second term. Required of Sophomores in Mechanical, Electrical, and Civil Engineering. Three laboratory credits per week, throughout the year. Required of First-Year Short-Course students in Engineering. One and one-half laboratory credits per week, second term. Required of Juniors in Agriculture.*

VIII. Pattern Making.—Continuation of Course III. *Two laboratory credits per week, second term. Required of Sophomores in Mechanical Engineering.*

IX. Steam Engineering.—Boilers and Thermodynamics.

Boilers.—Types, advantages and disadvantages, fuels, flue-gases, heat losses corrosion and incrustation, strength, accessories, valves, piping, shop practice, design. Text, Peabody and Miller.

Thermodynamics.—Mathematical discussion of laws, application to perfect gases, saturated vapors, superheated vapors, flow of fluids, engine economy, effect of cylinder walls, compounding, superheating, use of jackets, effect of varying cut-off, speed, pressure, etc., friction, hot-air and gas engines, refrigerating machines, compressed-air transmission, injectors, thermodynamic principles applied to the steam turbine. Text, Peabody's Thermodynamics of the Steam Engine. *Three recitation credits per week, throughout the year. Required of Juniors in Mechanical, Electrical, and Civil Engineering, and for twenty-seven weeks of Juniors in Chemical Engineering.*

X. Applied Mechanics.—Forces, composition and resolution, parallel forces, moments, couples, centres of gravity, velocity, acceleration, energy and momentum, falling bodies and projectiles, centrifugal force, moment of inertia, radius of gyration, angular momentum, energy of rotating bodies, impact, etc. Strength of materials, stresses in structures, riveted joints, beam theory, struts, columns, shafting, springs, etc. Solution of practical problems. Text, Lanza's Applied Mechanics. *Five recitation credits per week for twenty-four weeks. Required of Juniors in Mechanical, Electrical, and Civil Engineering, and of Juniors in Chemical Engineering for the first term.*

XI. Hydraulics.—General principles, head and pressure, centre of pressure, velocity of discharge, flow through orifices and over weirs, Bernouilli's theorem, flow through pipes, flow through conduits and canals, energy of flow, horse powers, hydraulic machinery, rams, turbines, centrifugal pumps, and Pelton wheels. Merriman's Treatise on Hydraulics. *Five recitation credits per week, for last twelve weeks of second term. Required of Juniors in Mechanical, Electrical, and Civil Engineering.*

XII. Mechanism.—Instantaneous centres, centroids, lobed wheels, belts, pulleys, four-bar linkages, graphical determination of velocity ratios, quick-return motions, straight-line motions, pantographs, trains of gears, epicyclic trains, tooth gearing, epicycloidal and involute teeth, bevel wheels. etc. Schwamb and Merrill's Mechanism. *Three recitation credits per week, first term. Required of Juniors in Mechanical and Seniors in Chemical Engineering.*

XIII. Valve Gears and Dynamics.—Plane slide valves, piston valves, riding cut-off valves; Joy and Marshall gears; Stephenson, Gooch and Walscheart link motions; drop cut-off valves; Corliss, Brown and Putnam valves; dynamics of high-speed engine; analysis of stresses; effects of inertia; balancing, etc. Peabody's Valve Gears. Lectures and references. *Three recitation credits, for the second term. Required of Juniors in Mechanical Engineering.*

XIV. Machine Shop (continuation of course VII).—Advanced work in machine construction. *Three laboratory credits per week, throughout the year. Required* *of Juniors in Mechanical Engineering, and Second-Year Short-Course students in Engineering.*

XV. Experimental Engineering.—a.—Lectures and laboratory work in gases, oils, and fuels; flue gas analysis, calculation of air per pound of coal, loss due to excess air and to imperfect combustion; analysis of fuel gases and calculation of heating values; determination of heating values by the Junkers and Parr calorimeters; study of gases in producer and gas-engine work. *Two laboratory credits, first term. Required of Juniors in Mechanical, Electrical, and Civil Engineering.*

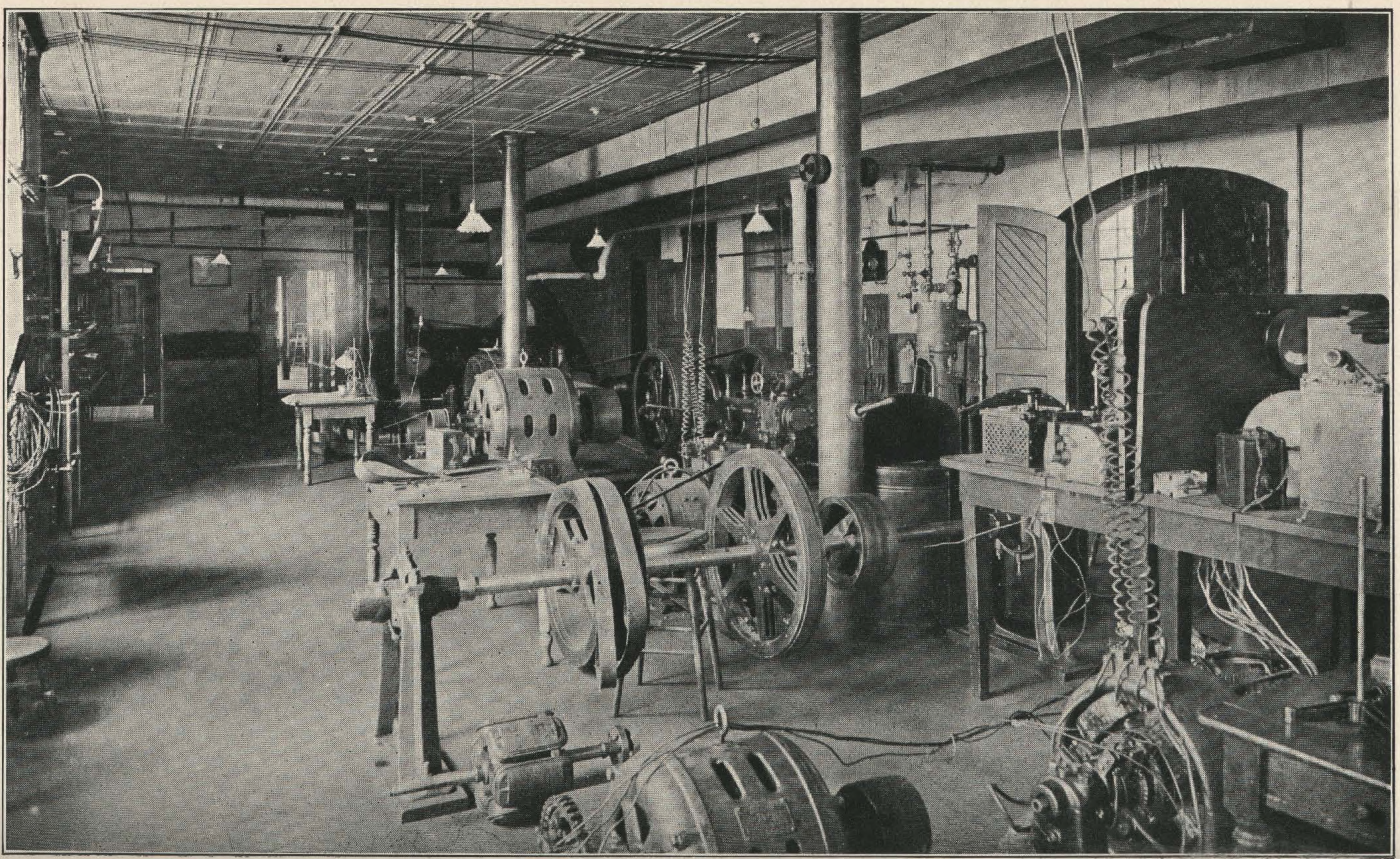
XVI. Experimental Engineering.—b.—General calibration and testing of engineering instruments and apparatus; gauges; planimeter; manometers; indicators; Prony brakes; scales; valve setting by measurement and by the indicator; Carpenter calorimeter; Peabody calorimeter; flow through orifices; weirs; nozzles; Pitot tube; meters; Venturi meters; hydraulic ram; turbine, etc. *Two laboratory credits per week, second term. Required of Juniors in Mechanical, Electrical, and Civil Engineering.*

XVII. Experimental Engineering.—c.—Properties of materials. Lectures on the metallurgy of iron and steel; effects of impurities; coldworking; repeated stresses; tensile, compressive, and shearing strengths; ductility; resilience, etc.; copper, brass, bronze and other alloys; timber, stone, and brick. The manufacture of natural and Portland cements; effects of over and under burning, overliming, SO_3, etc.; discussion of tests and their interpretation. Laboratory work is parallel with lectures. Tensile strengths of cast-iron, wrought-iron, and steel; compressive strength of metals; timber, concrete, cement; shearing tests of metals; transverse tests of timber and iron; stress—strain diagram, elastic limit, yield point, modulus of rupture; tensile tests of cement; pat tests, boiling tests; specific gravity; fineness; time of set, etc. Determination of the best proportions of cement, sand, and rock of given characteristics. *Two lecture and two laboratory credits, first term. Required of Seniors in Mechanical, Electrical, and Civil Engineering.*

XVIII. Experimental Engineering.—d.—Hot-air engine, gas engine, steam pump, injectors, transmission dynamometers; boiler tests; complete tests of power plants; outside work on the H. P. of a stream, with tests of hydraulic power plant; outside tests of manufacturing plants, with calculations, reports, and recommendations. *Two lecture and two laboratory credits, second term. Required of Seniors in Mechanical Engineering. The laboratory work will also be taken by Seniors in Civil Engineering.*

XIX. Heating and Ventilation.—Discussion of the principles and practice of the various systems of heating and ventilating—direct and indirect, hot-air, hot water, pressure steam, exhaust steam, vacuum systems, fans, blowers; calculation of ventilation and radiation; flues, pipes, and radiators; air troubles; central heating systems with central power plants; design of heating system for a given building. *Two recitation credits per week, second term. Required of Seniors in Mechanical Engineering.*

XX. Machine Design.—Design of machine parts from considerations of the motions involved, strength, rigidity, and friction; design of a complete machine;



ELECTRICAL LABORATORY.

calculations with design of some type of engine, starting with given requirements of H. P., speed, etc., and with an assumed theoretical indicator card. *Three laboratory credits throughout the year. Required of Seniors in Mechanical Engineering.*

XXI. Power plants and power-plant design.—Study of the various types—as to choice, location, installation, and operation; prime movers, their accessories and auxiliaries.

Steam Plants.—Study of the effects on economy, range, and reliability of simple or compound, condensing or non-condensing engines with various valve gears, throttling and cut-off governors, different boiler installations, feed-water heaters, economizers, pressure regulators, pumps, injectors, mechanical stokers, forced and induced draft, chimneys, etc.; calculations of proper sizes, powers, and strengths of machines and apparatus of the power plant; methods of improving economy. The place of the steam turbine in power-plant work.

Hydro Plants.—Discussion of the types of hydraulic machinery, their efficiency and the particular conditions to which each is best adapted. This will be a development of the previous work in hydraulics to meet the need of the power engineer.

Gas-Producer Plants.—The different suction and pressure producers, theory, capacity, future, etc.; gas engines, from both the thermodynamic and the mechanical points of view. *Three laboratory credits, first term; two laboratory credits, second term. Required of Seniors in Mechanical Engineering.*

XXII. Thesis.—*Required of Seniors in Mechanical Engineering.*

D. Elementary Mechanisms.—Belts, pulleys, gearing, screw gearing, differential screws, tackles, hoists, hydraulic jacks, inclined planes, differential pulleys, pumps, crank and rocker, sliding and swinging block mechanisms, shafts, hangers, etc., cams and their design. *Three recitation credits, throughout the year. Required of First-Year Short-Course students in Engineering.*

E. Engineering Theory.—An elementary discussion of types of engines, valve gears, governors, etc., boilers, types, corrosion and incrustation, combustion, methods of firing, draft, safety valves, boiler H. P. testing; lubricants and lubrication; gas engines; elementary study of materials; practical electricity. *Five recitation credits, throughout the year. Required of Second-Year Short-Course students in Engineering.*

J. Forging and Machine Shop.—*Two shop credits per week for twenty-four weeks. Required of Second-Year Short-Course students in Agriculture.*

Electrical Engineering.

PROFESSOR TOLMAN, MR. J. A. FOTTLER.

The aim of the course in electrical engineering is to give to a student pursuing it a satisfactory knowledge of the fundamental principles of the subject, and, building upon these, to acquaint him with the practical application of them to electrical machinery and to the distribution of electricity for lighting, railroads, and power purposes.

The department is prepared to make laboratory tests of electrical machinery, and the time given to practical work is a large part of that required in the course.

Subjects.

I. Theory of Direct Currents.—A detailed study of the theory of direct current apparatus. The theory, use, care of the dynamo. *Three recitation credits per week, first term. Required of Juniors in Electrical Engineering and of Seniors in Mechanical and Civil Engineering.*

II. Direct Current Measurements.—A course following Physics V and consisting of tests of various types of direct current apparatus. These include magnetization and characteristic curves of different types of machines. Efficiency, regulation, temperature, and other tests are included in this course. *Three laboratory credits per week, second term Required of Juniors in Electrical Engineering.*

V. Theory of Alternating Currents.—Recitations and lectures. Alternating current theory and practice dealing with alternating current machinery, such as the A. C. dynamos, synchronous and induction motors, converters, and transformers. *One and one-half recitation credits per week, second term. Required of Juniors in Electrical Engineering and of Seniors in Mechanical Engineering. Three recitation credits per week, throughout the year. Required of Seniors in Electrical Engineering.*

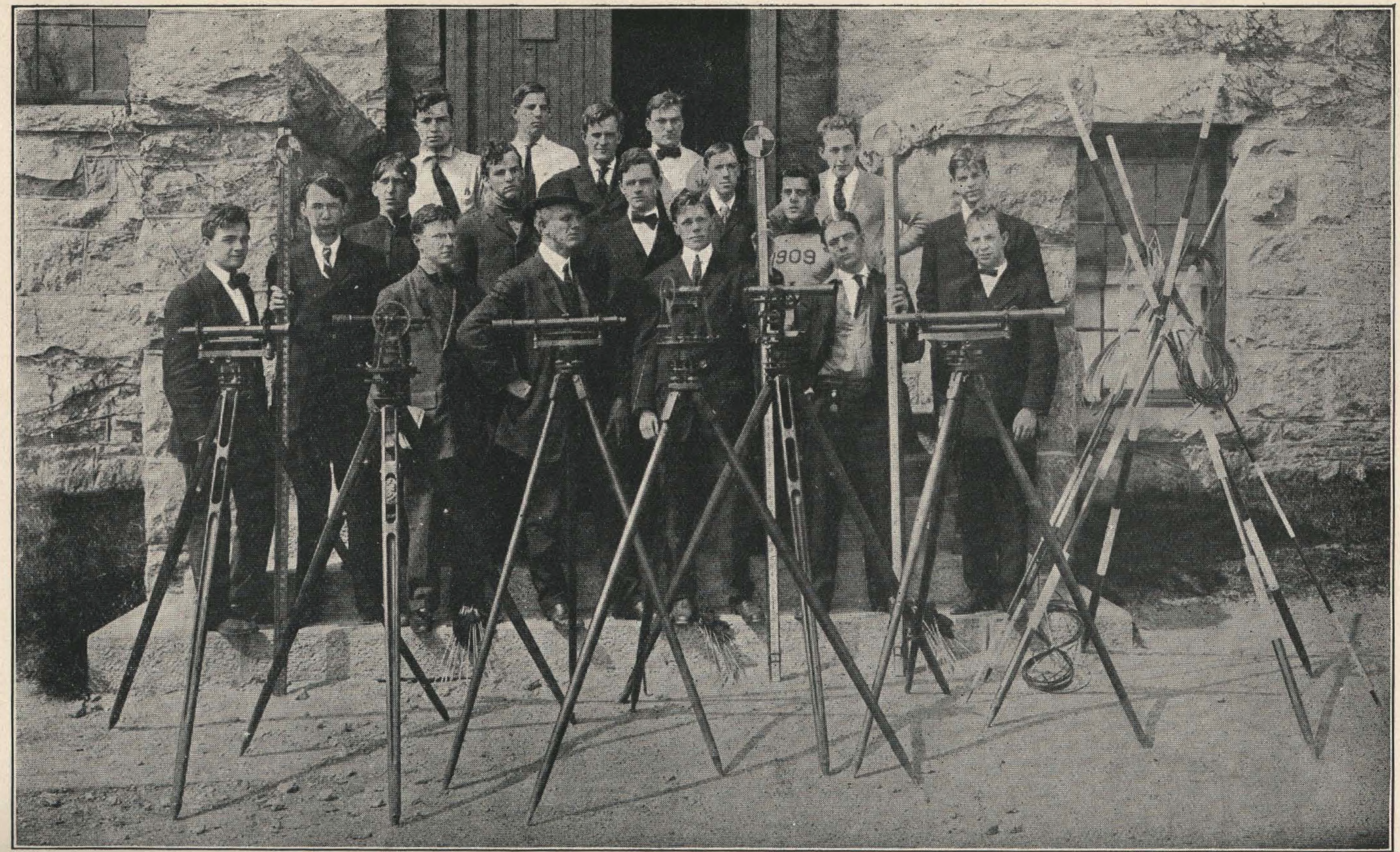
VI. Alternating Current Measurements.—A course following Physics VII and consisting of tests of different types of alternating current apparatus. Single and poly-phase generators and motors, synchronous and induction motors, converters, and transformers. *Three laboratory credits per week, throughout the year. Required of Seniors in Electrical Engineering.*

VII. Design of Electrical Machinery.—General principles of design of electrical apparatus, including the design of a direct and alternating current generator. *Three laboratory credits per week, second term. Required of Seniors in Electrical Engineering.*

VIII. Telephone Engineering.—Discussion of the development of the telephone and modern telephone practice. *One recitation credit per week, first term. Required of Seniors in Electrical Engineering.*

IX. Electric Illumination.—A consideration of units of illumination and the measurement of candle power. The theory of spherical photometry and integrating photometers. The study of different types of arc, incandescent, and vapor lamps, shades and reflectors. *One and one-half recitation credits per week, second term. Required of Juniors in Electrical Engineering.*

X. Transmission of Energy.—A study of systems of high-tension distribution, including the construction of the lines, insulation, protection, and troubles developing in high-tension work. *Two recitation credits per week, first term; and one recitation credit. second term. Required of Seniors in Electrical Engineering.*



READY FOR FIELD WORK.

XI. Electric Railway Engineering.—Discussion of economic considerations in the development of an electric railway, the construction, location of generating station, the design of the distributing system, types of motors and systems of control. *Two recitation credits per week, first term. Required of Seniors in Electrical Engineering.*

XII. Thesis.—*Required of Seniors in Electrical Engineering.*

Civil Engineering.

PROFESSOR WEBSTER.

It is the purpose of this course to give the student such training in the fundamental principles of engineering as to prepare him for the duties and opportunities that may be offered in the various fields of civil engineering. With this object in view, application of the theories and principles learned in the classroom is made in the field, laboratory, and drafting-room. An effort is also made to give the student as liberal a training in the sciences and arts as his limited time will permit, but the primary purpose is to prepare him for one definite line of work.

In order to widen the scope of the student's opportunities, the name of the department has been changed from Highway Engineering to Civil Engineering, and corresponding changes have been made in the course of study. However, owing to the growing importance of highway engineering in this state and throughout the country in general, considerable emphasis is still placed on this phase of engineering work. The state appropriates annually a sum of money which is expended under the direction of the instructor and students of the department in the construction and maintenance of roads on the college property. In this way practical experience is obtained in highway engineering.

The equipment of the department consists of levels, transits, compasses, rods, tapes, chains, drafting instruments, etc., and testing machines, to which the student has access. He also has free use of the library, in which are found the leading engineering journals, and many of the principal works on various engineering subjects.

Subjects.

I. Surveying.—Instruction is given by means of recitations, field and laboratory work, in the theory, use, and adjustments of the compass, level, and transit. The field work includes the prolongation of straight lines, determination of distances, angles, areas, boundaries, corners, and exercises in leveling, etc. Maps are made from the field notes. *One recitation and two field credits per week, first term. Required of Sophomores in Mechanical, Electrical, and Civil Engineering.*

II. Topographic Surveying.—A study is made of the theory and use of the plane table, and of the transit and stadia in making topographic surveys. A complete topographic survey based on a system of triangulation is made, including the completion of a map. *One recitation and two field credits per week, second term. Required of Sophomores in Civil Engineering.*

III. Railroad Engineering.—The work consists of a reconnoissance, a preliminary and a location survey of a short line of railroad, for the purpose of giving the student sufficient work to familiarize him with the methods in actual practice. A set of notes is kept by each student, from which a map, a profile, and estimates are made. A study is also made of the properties of curves, switches, frogs, turnouts, and the spiral, and the methods of locating these in the field. *Four credits per week, divided between field and recitation as seems advisable, first term. Required of Juniors in Civil Engineering.*

IV. Graphic Statics.—Instruction is given in graphic statics and its application in the design of simple framed structures. *Two recitation credits per week, first term. Required of Juniors in Civil Engineering.*

V. Roads and Pavements.—The theoretical work of this course consists of a discussion of the principles and details involved in the location, construction, and maintenance of earth, gravel, and macadam roads, together with a discussion of the methods of construction, durability, maintenance, and assessment of cost of the various kinds of pavements used on city streets. The field work consists in the construction of a gravel or macadam road on the college grounds. *Three recitation and one field credits per week, second term. Required of Juniors in Civil Engineering.*

VI. Bridge Details.—The work in this course consists in making a tracing of a shop drawing, estimating the weight and determining the efficiency of the various members of a highway bridge. *One laboratory credit per week, first term. Required of Seniors in Civil Engineering.*

VII. Bridge Analysis.—Instruction is given in the computation of stresses in the various types of bridges by graphical and algebraic methods under different conditions of loading. *Two recitation credits per week, first term. Required of Seniors in Civil Engineering.*

VIII. Bridge Design.—The student designs a plate girder and a bridge, makes the shop details, and a set of working drawings. *Three laboratory credits per week, second term. Required of Seniors in Civil Engineering.*

IX. Masonry Construction.—This course deals with the materials of masonry, including brick, stone, lime, and cement; the theory of masonry structures, including foundations for buildings, bridges, and piers; the construction of retaining walls, culverts, bridge abutments; masonry dams and arches. The student is directed to important articles in the current literature of the subject, and a systematic and thorough laboratory course on cement testing is given. *Two recitation and one laboratory credits per week, first term. Required of Seniors in Civil Engineering.*

X. Reinforced Concrete.—A study is made of the principles of mechanics underlying the design of reinforced concrete. Working stresses and economical proportions are considered, also the application of reinforced concrete construction to building construction, arches, retaining walls, dams, and miscellaneous structures. *Two recitation credits per week, second term. Required of Seniors in Civil Engineering.*

XI. Sewerage.—A discussion of the separate and combined systems of sewers; relation of rainfall to storm-water flow; hydraulics of sewers; removal of house sewage; the design and construction of sewers and methods of sewage disposal. *Two recitation credits per week, first term. Required of Seniors in Civil Engineering.*

XII. Water Supply.—A discussion of the quantity of water required, sources of supply, flow of streams, and of ground water. Instruction is also given in the general arrangement of water works, loss of head in flow of water through pipes, stresses in dams and water towers. Works for the purification and distribution of water are discussed, including reservoirs, settling basins, pumping machinery, etc. *Three recitation credits per week, second term. Required of Seniors in Civil Engineering.*

XIII. Tunneling.—A study of the methods of making tunnel surveys and of the modern methods employed in tunnel construction. *One recitation credit per week, second term. Required of Seniors in Civil Engineering.*

XIV. Contracts and Specifications.—A study of the fundamental principles of the law of contracts, and their application to engineering work. *Two recitation credits per week, second term. Required of Seniors in Civil Engineering.*

XVI. Vacation Reading.—Systematic reading during vacations on some topic assigned by the head of this department.

XV. Thesis.—The preparation of a thesis on some subject connected with the work of this department, involving original investigation or experiment. *Required of Seniors in Civil Engineering.*

Geology and Mineralogy.

DR. WHEELER, DR. LEIGHTON, MR. SMITH.

GEOLOGY.—Under this subject historical geology is considered in outline, attention being given, also, to those phases of dynamical and structural geology which are particularly important. Special attention is given to rock weathering and soil formation, and to thosec haracteristics of rocks which are of chief importance in connection with road construction.

DETERMINATIVE MINERALOGY.—A short course dealing with the elements of crystallography is given, together with the physical and chemical characteristics of minerals, especially of the rock-making minerals composing our soils. Laboratory work in blowpipe analysis and physical determination of minerals follows the crystallography.

Subjects.

I. Geology.—*Two recitation credits per week, second term. Required of Juniors in Civil Engineering.*

II. Mineralogy.—See Chemistry XI.

History.

PRESIDENT EDWARDS, MR. SPENCER.

Subjects.

I. Social, Economic, and Industrial History of the United States.—*Two recitation credits per week, first term; and three recitation credits per week, second term. Required of Juniors in all courses.*

II. Government and Politics in the United States.—*Five recitation credits per week, first term, last six weeks; and second term, first six weeks. Required of Seniors in all courses.*

Languages.

PROFESSOR WATSON, MR. SPENCER, MISS MYRICK.

The subjects grouped under this head are English, German, and French.

In all the college courses leading to a degree, English is required throughout the first three years and during twelve weeks of the Senior year. Much practice is given in written and oral expression, and literature is also studied in representative masterpieces. Two years of foreign language work are required in all college courses leading to a degree except mechanical, electrical, and civil engineering, where the requirement is one year. Preference is given to German, but French will be taught if there is sufficient demand for it.

The library is a most important factor in the work of the department, as the English language and literature are represented in it by some twelve hundred carefully selected volumes, and the French and German literatures by about six hundred.

ENGLISH.

I. Rhetoric.—Text-book study and practical application of rhetorical principles in written work. *One recitation credit per week, throughout the year. Required of Freshmen in all courses.*

II. Newspaper Work.—*One recitation credit per week, first term. Required of Sophomores in all courses.*

III. Argumentation.—A study of fundamental principles. Practice in brief-making and essay writing. *One recitation credit per week, second term. Required of Sophomores in all courses.*

IV. Modern English Prose.—*Two recitation credits per week, first term; and one recitation credit per week, second term. Required of Juniors in all courses.*

V. Modern English Poetry.—*Four recitation credits per week, second term, last twelve weeks. Required of Seniors in all courses.*

VI. Individual Work in Composition.—*From three to five recitation credits per week, first term; Freshman year. An option for entering students.*

A. Elementary English.—Grammer, dictation, composition, and reading of masterpieces. Constant practice in writing and oral expression. *Four recitation credits, throughout the year. Required of Short-Course students in Agriculture and Engineering, first year.*

B. Elementary English.—A continuation of A, including, also, some instruction in civics and economics. *Three recitation credits, throughout the year. Required of Short-Course students in Agriculture and Engineering, second year.*

ORAL EXPRESSION.

I. Interpretive Reading.—The fundamentals of expression, pronunciation, articulation, the training of the voice. The intellectual element in expression: emphasis, inflection, phrasing—the reading of prose. The emotional element in expression; quality, force, pitch, rhythm—the reading of poetry. *One recitation credit per week, throughout the year. Required of all Freshmen.*

II. Dramatic Expression.—Standard plays will be studied in class and presented in public from time to time. *One recitation credit per week, throughout the year. Required of all Sophomores.*

III. Debating.—Instruction and practice in the art of debate. Two public debates will be given by the students. *One recitation credit per week, throughout the year. Required of all Juniors.*

IV. Oratory and Extempore Speaking.—Theory and practice. *One recitation credit per week, second term, last twelve weeks. Required of all Seniors.*

GERMAN.

I. Elementary German.—Grammar, dictation, conversation, reading of easy prose and poetry. *Four recitation credits per week, throughout the year. Required of Freshmen who do not offer German for entrance.*

II. Reading of intermediate texts, composition, conversation, study of one of Schiller's masterpieces or similar work. *Three recitation credits per week, throughout the year. Required of Sophomores in Agriculture, Applied Science, Home Economics, and Chemical Engineering.*

III. Scientific and Classical German.—*Three recitation credits per week, throughout the year. Elective for students who have taken I and II or their equivalents.*

IV. Scientific German.—*From three to five recitation credits per week, first term; Freshman year. An option for entering students.*

FRENCH.

I. Elementary French.—Grammar, dictation, conversation, reading of easy prose and poetry. *Four recitation credits per week, throughout the year.*

II. Reading of intermediate texts, composition, conversation, selections from Hugo's Les Miserables or similar work. *Three recitation credits per week, throughout the year.*

III. Scientific and Classical French.—*Three recitation credits per week, throughout the year. Elective for students who have taken I and II or their equivalents.*

IV. Scientific French.—*From three to five recitation credits, first term; Freshman year. An option for entering students.*

Mathematics.

PROFESSOR TYLER.

The work in this department covers two distinct phases of mathematical training: the college and the short-course instruction. Throughout the regular college work emphasis is laid both on the theory and direct application of the different subjects to the problems of engineering and agriculture. An attempt is made to present a working knowledge of arithmetic, algebra, geometry, and trigonometry and their practical use to Short-Course students.

Subjects.

III b. Higher Algebra.—*Five recitation credits per week, nine weeks, first term. Required of all Freshmen.*

III c. Trigonometry.—*Five recitation credits per week, nine weeks, first term. Required of all Freshmen.*

IV b. Trigonometry completed and Analytics.—*Five recitation credits per week, second term. Required of Freshmen in Engineering and Applied Science.*

V a. Analytics completed and Calculus.—*Five recitation credits, throughout the year. Required of Sophomores in Engineering.*

VI a. University Algebra.—*Three recitation credits per week, first term. Elective for Freshmen.*

VI b. Practical Computations.—*Three recitation credits per week, second term. Elective for Freshmen.*

C. Arithmetic and Algebra.—*Five recitation credits per week, first term. Required of students in the Short Courses, first year.*

D. Algebra.—*Five recitation credits per week, second term. Required of students in the Short Courses, first year.*

F. Geometry, Mensuration, Trigonometry.—*Four recitation credits per week, throughout the year. Required in the Short Courses, second year.*

Military Science and Tactics.

LIEUTENANT STAHL.

All male students are required to attend exercises in military instruction during their attendance at the college unless excused by reason of physical disability. Credit is given for this work on the same basis and under the same regulations as in other departments.

The war department furnishes for use in this instruction United States magazine rifles (Krag-Jorgensen pattern), swords, equipments, and ammunition for target practice. The cadets are organized this year into a battalion of two companies of infantry and band. Theoretical instruction is given by means of lectures and recitations, and practical instruction by means of infantry drills in the school of the squad, the company, and the battalion. The aim of these military exercises is to improve the physique, to inculcate the habit of prompt and cheerful obedience and courtesy to rightfully constituted authority, and to exercise an elevating influence on the conduct of the corps of cadets.

Competitive drills are held annually between the companies of the battalion. The name of the best drilled company and its commander is placed on the battalion colors. Company A, commanded by Cadet Captain R. W. Goodale, was the winner in the annual color contest held May 21, 1908. The winner of the prize medal in the individual competitive drill, June 16, 1908, was H. A. Tisdale, Second Sergeant, Company A.

The names of such students of the graduating class each year as have shown special aptitude for military service will be reported to the adjutant-general of the army and also to the adjutant-general of the state.

Subjects.

I. Practical Instruction.—Drills in the school of the squad, of the company, and of the battalion; target practice. *Two exercises of one hour each per week, counting as one credit, throughout the year. Required of all the command.*

II. Theoretical Instruction.—United States Infantry Drill Regulations. Small Arms Firing Regulations. Manual of Guard Duty. Field Service Regulations of United States Army. *One recitation credit per week, throughout the year. Required of all Freshmen.*

BATTALION ORGANIZATION, APRIL, 1909.

COMMANDANT,

Henry G. Stahl, First Lieutenant, 6th U. S. Infantry.

CADET OFFICERS AND NON-COMMISSONED OFFICERS.

Battalion.

Major	E. R. Butts.
Adjutant	L. Slack.
Quartermaster	D. E. Warner.
Sergeant-Major	A. J. Minor.
Color Sergeant	C. B. Edwards.
Quartermaster Sergeant	C. R. Wade.

Company A.

Captain	R. W. Goodale.
First Lieutenant	G. J. Schaeffer.
Second Lieutenant	A. F. Wagner.
First Sergeant	L. L. Mounce.
Sergeant	B. K. Harris.
Sergeant	L. C. Easterbrooks.
Sergeant	H. Southard.
Sergeant	E. A. Comber.
Corporal	I. C. Mitchell.
Corporal	R. H. Hazard.
Corporal	H. A. Easterbrooks.
Corporal	W. H. Tully.

Company B.

Captain	P. S. Burgess.
First Lieutenant	S. Quinn.
Second Lieutenant	A. H. Kenyon.
First Sergeant	R. H. Carpenter.

Sergeant	H. J. Smith.
Sergeant	W. G. Taylor.
Sergeant	R. W. Cummings.
Sergeant	D. E. Worrall.
Corporal	W. Henry.
Corporal	W. W. Daniels.
Corporal	W. J. Whalen.
Corporal	J. I. Hardy.

Band.

Chief Musician	W. C. Rietzel.
Principal Musician	H. B. Albro.
Drum Major	W. T. Neal.
Sergeant	C. W. Rietzel.
Corporal	C. B. Sisson.

Physics.

PROFESSOR TOLMAN, MR. J. A. FOTTLER.

The instruction given in this department is intended to acquaint the students with the fundamental concepts of physical science. The work will be as broad as is consistent with the time and needs of the students.

This department is equipped with vernier and micrometer calipers, micrometer microscopes, comparator, dividing engine, cathetometer, simple and compound pendulums and balances for exact measurements in mechanics. It has also apparatus for determining the coefficient of linear expansion, and for the determination of specific and latent heats, a weight thermometer apparatus for determining the density of liquids and solids, a thermo-couple for direct determination of temperatures up to 1650° C., Melloni's apparatus for investigation in radiant heat, and apparatus for determining the mechanical equivalent of heat.

In light the laboratory is equipped to carry on the usual college work, and so has apparatus for finding the focal length of lenses and mirrors: a Pulfrich refractometer, spectrometers, an interferometer (Institute of Technology patterns), photometer, total reflectometer, and many smaller instruments, including simple and compound microscopes. The greater part of the above listed apparatus is new, having been recently purchased of foreign makers.

The laboratory for exact measurements in electricity and magnetism is also fitted up with new apparatus recently purchased of the

Leeds and Northrup Company of Philadelphia, and among other instruments are several types of D'Arsonval galvanometers; Wheatstone bridges, slide wire and post-office patterns; standard cells (Clark and Weston types); standards of resistance, capacity and self-induction; magnetometers; voltameters; and many smaller instruments sufficient to carry out the usual college work in electrical measurements. For advanced electrical measurements the department is provided with Weston and Thompson ammeters, and voltmeters with both low and high ranges, wattmeters, a Leeds and Northrup alternating and direct current comparator.

In the subject of sound the department is provided with apparatus for the determination of wave-length, pitch, frequency, etc.

Subjects.

I. Descriptive Physics.—A course designed for students in Agriculture. Considerable time is given to the discussion of the principles of mechanics as applied to farm machinery. The course furnishes an excellent foundation for further work in agricultural physics. *Five recitation credits per week, second term. Required of Sophomores in Agriculture.*

II. General Physics.—A mathematical treatment of the subject. *Four recitation credits per week, throughout the year. Required of all Sophomores in Engineering and Teachers' Course in Applied Science.*

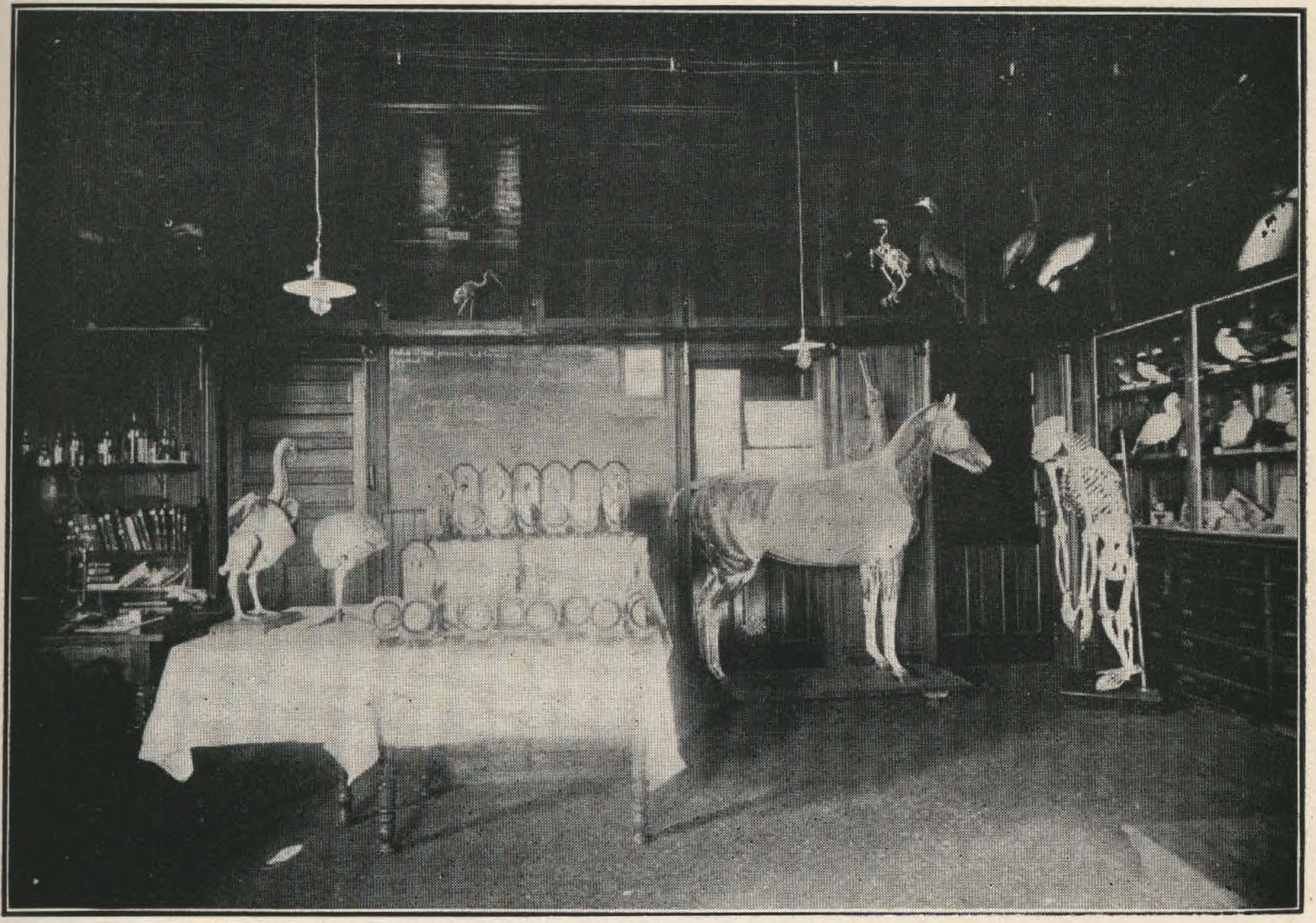
III. Laboratory Physics.—A course in physical measurements intended to teach students methods and to form a basis for future engineering work. The calculation of results will be given special attention. *One and one-half laboratory credits per week, throughout the year. Required of Sophomores in Engineering and Teachers' Course in Applied Science.*

IV. Electrical Measurements.—A course of lectures treating of the theory and manipulation of electrical measuring instruments. *Three recitation credits per week for nine weeks, first term. Required of Juniors in Electrical Engineering.*

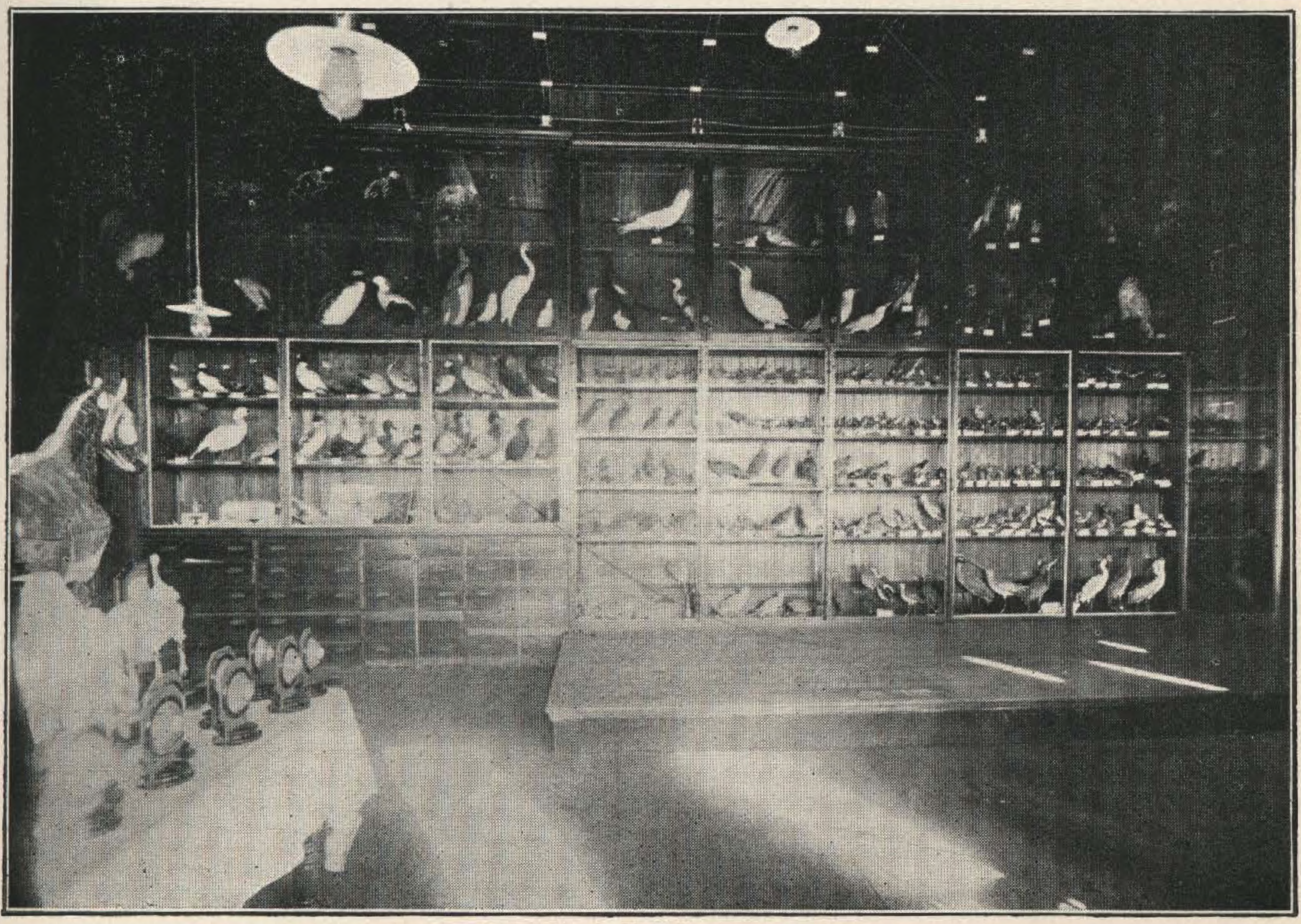
V. Electrical Measurements Laboratory.—Direct currents measurements, resistance, potential, current, magnetic properties of iron and steel, calibration of direct current instruments. *One and one-half laboratory credits per week for sixteen weeks, first term. Required of Juniors in Electrical Engineering.*

VI. Photometric Measurements.—A study of the candle power of different forms of arc, incandescent, and mercury-vapor lamps. *One and one-half laboratory credits for two weeks, first term. Required of Juniors in Electrical Engineering.*

VII. Electrical Measurements Laboratory.—Alternating currents measurements, self-induction, mutual-induction, capacity. Calibration of alternating current instruments. *Three laboratory credits for six weeks, first term. Required of Seniors in Electrical Engineering.*



LADD LABORATORY—SKELETON ROOM.



THE BIOLOGICAL LABORATORY.

A. Elementary Physics.—A descriptive course covering the subjects, mechanics of liquids and gases. *Three recitation and one laboratory credits per week, throughout the year. Required of Short-Course students* in *Engineering, second year.*

Psychology.

PRESIDENT EDWARDS.

I. Lectures, recitations, simple laboratory experiments.—*Three recitation credits per week, first term. Required of Juniors in Applied Science and Home Economics.*

Woodwork.

MR. T. C. RODMAN.

H. Farm Buildings.—A practical course in the planning of farm structures, estimating quantities of material required, and costs. *One shop credit per week, first term. Required of Short-Course students in Agriculture, first year.*

I. Shopwork.—Woodworking at the bench and lathe. *One and one-half shop credits per week, first term. Required of Short-Course students in Agriculture, first year.*

Zoölogy.

PROFESSOR BARLOW.

The work in this department is designed to meet the needs of two classes of students, those who are interested in the economic aspect of animal life and those who purpose to become teachers. To meet the needs of the first class, subjects are given which are planned to call attention to the economic importance of the different orders. Much time is allotted to entomology, and in this subject special attention is given to injurious species. For those who are to be teachers, a thorough training is given in the morphology and classification of animals as a preparation for the more special subjects that follow. In these attention is directed to the habits and relations of animals, which are studied both in the field and laboratory.

The laboratory is equipped with a series of charts, valuable models, and many mounted skeletons. The Rhode Island birds are represented by mounted specimens of practically every species; fishes, reptiles, and batrachians, by alcoholic preparations. The collection of insects, begun recently, now fills about eighty cases, and is being steadily increased. Each student is given the use of compound and dissecting microscopes and necessary instruments for laboratory work.

Subjects.

I. General Zoölogy.—Discussion of the more important laws of Biology and the dissection of representatives of the more important Phyla. *Two laboratory and one recitation credits, first term. Required of Sophomores in Agriculture, Home Economics, and Applied Science.*

II. General Zoölogy (continued).—Special attention is given to the relation of animals to their surroundings. *Two laboratory and one recitation credits, second term. Required of Sophomores in Applied Science.*

III. Physiology.—The physiology of the higher mammals. *One laboratory and three recitation credits per week, second term. Required of Sophomores in Agriculture and Home Economics.*

IV. Economic Entomology.—*One laboratory and three recitation credits per week, second term. Required of Juniors in Agriculture.*

V. General Entomology.—*Two laboratory and two recitation credits per week, throughout the year. Elective.*

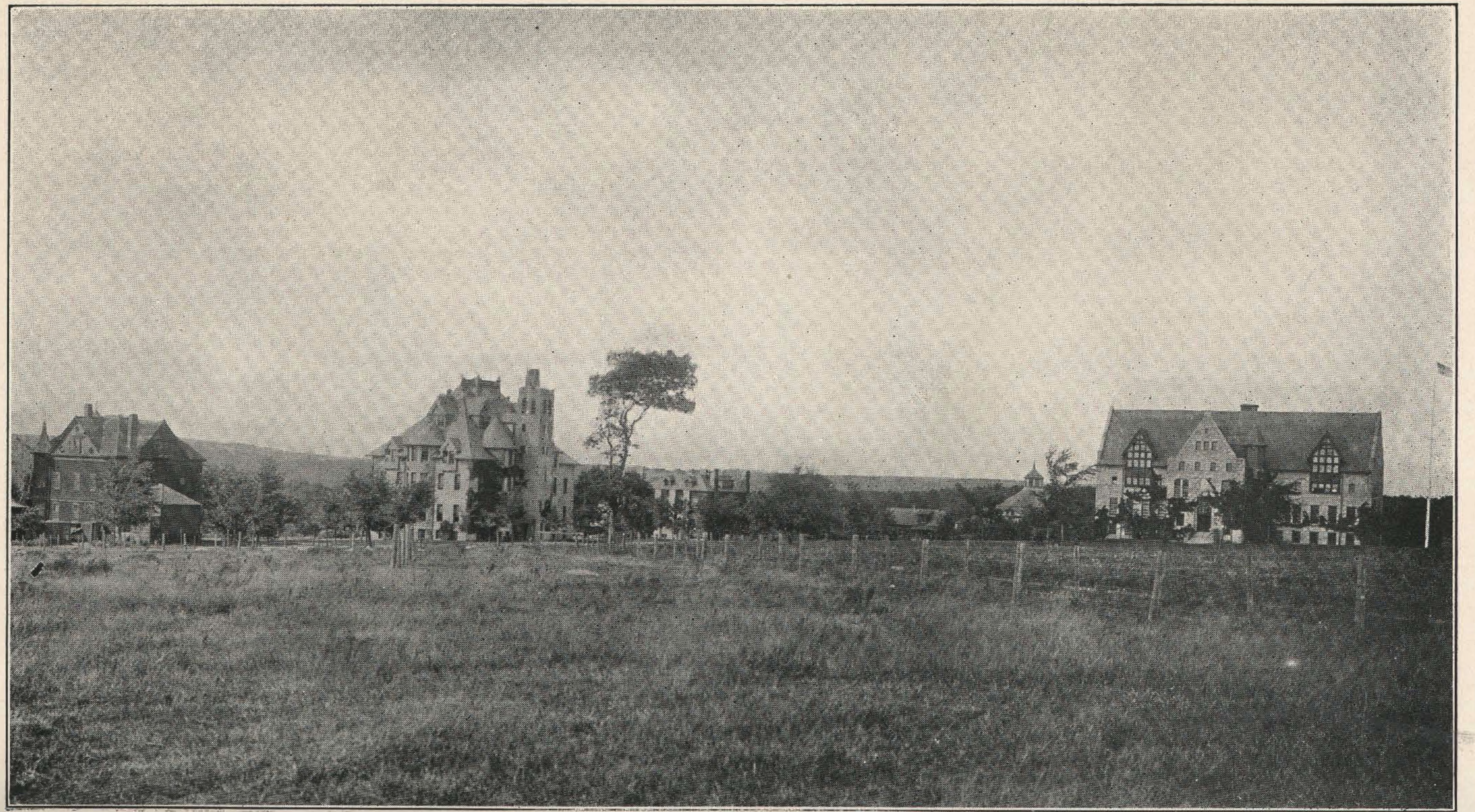
VI. Systematic Entomology.—*Three laboratory credits per week, throughout the year. Elective for those who are taking or have taken Zoölogy V.*

VII. Vertebrate Anatomy.—*Two laboratory and one recitation credits per week, first term. Required of Juniors in Home Economics.*

VIII. Histology and Embryology.—*Two laboratory and one recitation credits per week, second term. Required of Juniors in Home Economics.*

IX. Methods in Nature Study.—Bird life, habits of insects, aquaria. *Two laboratory or field credits and one recitation credit per week, second term. Required of Sophomores in the Teachers' Course in Applied Science.*

A. Elementary Zoölogy.—Deals with forms of economic importance. *Two recitation and two and one-half laboratory credits per week, first term. Required of Short-Course students in Agriculture, first year.*



FROM THE VILLAGE ROAD,

Organizations.

Athletic Association.

Leroy Leidman Mounce	President.
George Joseph Schaeffer	Vice-President.
John Barlow	Secretary–Treasurer.

Agricultural Club.*

John Leland Sherman	President.
George Joseph Schaeffer	Vice-President.
Howard Albert Safford	Secretary–Treasurer.

Engineering Society.

Warren Henry	President.
George Abbott Peabody	Vice-President.
Harry Benjamin Albro	Secretary-Treasurer.

Science Club.

F. R. Pember	Secretary.

Young Men's Christian Association.

Harry Robert Tisdale	President.
Oliver Murray Drummond	Vice-President.
John Ira Hardy	Secretary.
George Abbott Peabody	Treasurer.

Young Women's Christian Union.

Rhobie Lucelia Cargill	President.
Annie Eliza Kenyon	Vice-President.
Bertha May Heath	Secretary.
Susie Stanton Wood	Treasurer.

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*Affiliated with the New-England Federation of Agriculturists.

Alumni Association.

ARTHUR EARLE MUNROE, 1900.................................President.

Providence, R. I.

CLOVIS WILLIAM MITCHELL, 1908...........................Vice-President.

New London, Conn.

WARREN BROWN MADISON, 1894*.....................Secretary-Treasurer.

Kingston, R. I.

Executive Committee.

A. E. MUNRO, 1900,
C. W. MITCHELL, 1908,
W. B. MADISON, 1894,*
H. R. LEWIS, 1907,
L. L. HARDING, 1906.

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*Deceased.

Students.

Graduates.

Bosworth, Alfred Willson, B. S. ('99), Chemistry and Botany	Geneva, New York.
*Crandall, Daniel Alva (Alfred University)	Rockville.
Irish, J. Swett, B. S. (Univ. of Me., '08), Bacteriology and Zoölogy	Kingston.
*Keefer, Edith Cecilia, B. S. ('03)	Kingston.
Whiting, Albert Lemuel, B. S. (Mass. Agr. College, '08), Agronomy and Botany	Kingston.

Seniors.

Cargill, Rhobie Lucelia, Gen. Sci	Abbott Run.
Craig, James McIntyre, Agr	Riverpoint.
Crandall, Fred Kenyon, Agr	Westerly.
French, Henry Frank, El. Eng	Providence.
Howe, Albert Mendel, El. Eng	Brockton, Mass.
Knowles, Walter, Civ. Eng	Kingston.
Lee, Alfred Rogers, Agr	Greenwood, Mass.
Moran, Walter John, Civ. Eng	New London, Conn.
Moyer, Louis Earl, Civ. Eng	Dexter, N. Y.
Rockwell, Ruby Belle, Chem	Troy, Pa.
Smith, Elmer Francis, El. Eng	East Lyme, Conn.
Tisdale, Harry Robert, Chem	New London, Conn.
Tucker, Ellen Capron, Gen. Sci	Kingston.

Juniors.

Burgess, Paul Steere, Chem. Eng	Pawtucket.
Carpenter, Randolph Haywood, El. Eng	East Providence.
Cummings, Robert Winthrop, Mech. Eng	Orange, Mass.
Easterbrooks, Harold Arnold, App. Sci	Providence.
Goodale, Ralph Waldo, Civ. Eng	Leominster, Mass.
Hardy, John Ira, Chem. Eng	Groveland, Mass.
Heath, Bertha May, Agr	Lunenburg, Mass.
Henry, Warren, Civ. Eng	Hopedale, Mass.
Kenyon, Amos Harris, El. Eng	Usquepaug.
Lamond, Helen Scott, Gen. Sci	Usquepaug.
Mounce, Leroy Leidman, Agr	North Marshfield, Mass.
Peabody, George Abbott, El. Eng	Middleton, Mass.
Sherman, John Leland, Agr	Providence.

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* Undergraduate work in agriculture.

Slack, Lewis, Civ. Eng	Kingston.
Smith, Hiram Jameson, Civ. Eng	Woonsocket.
Taylor, Walter Gray, El. Eng	Middletown.
Tucker, Harriet Taber, Gen. Sci	West Kingston.
Wagner, Albert Frederic, El. Eng	Berkeley.
Wheeler, Richard Howes, El. Eng	New London, N. H.
Worrall, David Elbridge, Chem. Eng	Woonsocket.

Sophomores.

Albro, Harry Benjamin, El. Eng	Pontiac.
Andrews, Carmen Nichols, App. Sci	Slocums.
Angilly, Charles Enoch, Jr., Civ. Eng	Providence.
Butts, Eberhard Raynor, El. Eng	East Greenwich.
Caldwell, Dorothy Walcott, Civ. Eng	Woonsocket.
Comber, Edward Anthony, El. Eng	Narragansett Pier.
Davis, Edgar George	Providence.
Easterbrooks, Louis Church, Agr	Providence.
Falk, Gustav Adolf, El. Eng	East Greenwich.
Gilchrest, Clyde Ronald, El. Eng	Leominster, Mass.
Hahn, Byron George, El. Eng	Thomaston, Maine.
Harris, Burton Kenneth, Chem. Eng	Lime Rock.
Hazard, Ralph Marshall, Civ. Eng	Newport.
Healy, Patrick Joseph, Agr	Newport.
Kent, Robert Willard, Mech. Eng	Woonsocket.
Kenyon, Annie Eliza, App. Sci	Usquepaug.
Leonard, Charles Augustus, El. Eng	Hingham, Mass.
MacMillan, Walter Bruce, El. Eng	Pawtucket.
Madison, Thomas Edwin, El. Eng	East Greenwich.
Minor, Arthur Jacob, Civ. Eng	Kingston.
Mitchell, Irving Calvary, Civ. Eng	Harrisville.
Mowry, William Wheatley, El. Eng	Woonsocket.
Quinn, Stephen, El. Eng	Wakefield.
Robinson, Benjamin Rowland, Mech. Eng	Bedford Station, N. Y.
Ruprecht, Rudolf William, Chem. Eng	New York City, N. Y.
Safford, Howard Albert, Agr	Providence.
Schaeffer, George Joseph, Agr	Narragansett Pier.
Soule, Henry Eli, Mech. Eng	Wickford.
Wade, Ceylon Raymond, Civ. Eng	Bridgeton.
Warner, David Edmond, Jr., Agr	Bridgeton.
Whalen, William Joseph, Civ. Eng	Providence.
Wheeler, Ellery Harrison, El. Eng	Valley Falls.

Freshmen.

Barlow, Henry Newell, Civ. Eng	Wassaic, N. Y.
Beale, Allan Souther, Eng	Mapleville.
Bigelow, Carle Muzzy, Chem. Eng	Woonsocket.

Butterworth, Frank Bullock, Mech. Eng	Somerset, Mass.
Caldwell, Seth Atherton, Mech. Eng	Woonsocket.
Clark, Philip Harrison, El. Eng	Centreville.
Cobb, Electra Henrietta, Home Econ	Howardsville, Va.
Comstock, Jonathan Farnum, Agr	Cranston.
Congdon, Esther Loomis, Home Econ	Wakefield.
Daniels, Willis Washington, Civ. Eng	Pawtucket.
Doll, Walter, Civ. Eng	Berkeley.
Eleazarian, Aram, El. Eng	Teheran, Persia.
Fagan, Hugh Jean, Civ. Eng	Peacedale.
Gammino, Thomas Anthony, Civ. Eng	Providence.
Gilman, M. Elvin, Agr	Gilman, Maine.
Gould, Alice Varney, Home Econ	Milo, Maine.
Hindle, Clifford Dean, Chem. Eng	Central Falls.
Johnson, Charles Varnum, Civ. Eng	Allenton.
Larkin, Charles Herbert, Civ. Eng	Ashaway.
Mounce, Harry Lyden, El. Eng	North Marshfield, Mass.
Neal, William Thomas, Agr	Pittsfield, Mass.
Nugent, James Francis, Civ. Eng	Providence.
Nutting, Bertha May, Home Econ	Brickerville, Pa.
Patterson, Arthur John, El. Eng	Buffalo, N. Y.
Peckham, Harold Caldwell, Mech. Eng	Bristol.
Pickering, Earl Vivian, Civ. Eng	Blackstone, Mass.
Randall, William Olney	Providence.
Richmond, Fred Allen, El. Eng	Hope Valley.
Robinson, Eben George, Agr	Edgewood.
Sherman, George William, El. Eng	Lafayette.
Spaulding, Helen Constance, Home Econ	Hudson, N. H.
Steck, Frank, Civ. Eng	Newark, N. J.
Steere, Charles Arnold, Agr	Greenville.
Sullivan, John Leo, El. Eng	Lonsdale.
Torr, John Malcolm, Eng	Providence.
Tyler, Earl Albert, Chem. Eng	Centreville.
White, Thomas Bush, Mech. Eng	Amesbury, Mass.
Wood, Harvey Nichol, El. Eng	Plymouth, Mass.

Specials.

Browning, Alice Pearl	Wakefield.
Cooper, Gertrude M	Kansas City, Mo.
Cooper, Nellie Arvazena	Kingston.
Dautun, Alphonse Perron, Agr	North Hackensack, N. J.
Edwards, Clarence Bland, Agr	Kingston.
Fletcher, Edward Grove	Providence.
Kimball, Rhoda Evelyn, Agr	South Dartmouth, Mass.
MacNiff, David John Shields	Providence.
Meears, Etta Elizabeth	Kingston.
Pettengill, George Herbert	Amherst, N. H.

Pratt, Stuart Greene, Agr	Providence.
Sisson, Colville Brown, Agr	Providence.
Slater, Allae Cordelia, Home Econ	Providence.
Twe, Didhwo, Agr	Liberia, Africa.
Worth, Harry Venal, Agr	Newton, Mass.

Sub-Freshmen.

Ahrens, Bernard Alexander	Elmhurst, Long Island, N. Y.
Arnold, Clifford Danforth	Harrisville.
Burdick, George Chester	Niantic.
Croft, Frank Emerson	Plymouth, Mass.
Dean, Harold Andrew	Westerly.
Dyer, Lola Segar	Slocums.
Hadley, Chester Brown	Woonsocket.
Hart, Crawford Peckham	Middletown.
Herreshoff, Lewis Francis	Bristol.
Hopkins, Raymond Canfield	Shannock.
Hoxsie, David Kenyon	Canonchet.
Johnson, Frederick Isaiah	Barrington.
Knight, Eva Anna	Slocums.
Lagacy, Joseph Francis	Bridgeton.
Lambert, Leroy Leigh	Apponaug.
MacKenzie, William	Westerly.
Matthews, Wilfred Chipman	Providence.
Pollock, Grace Mabel	Wakefield.
Purington, Elbert Thomas	Providence.
Rietzel, William Charles	Charlestown.
Rouse, Clifford Augustus	Shannock.
Schryver, Albert Robins	Jericho, Long Island, N. Y.
Southard, Horace	Providence.
Thornley, Albert Lewis	Pawtucket.
Wilson, Sara Iola	Westerly.
Wood, John Midgley	Pawtucket.
Wood, Susie Stanton	Slocums.
Young, James Hannibal	Brooklyn, N. Y.

Short Course in Agriculture.

Aizpuru, Frank	Panama, Panama.
Barker, Stephen Congdon	Middletown.
Barrayarza, Fernando	Yaguajay, Cuba.
Brown, Herman Byron	Hope Valley.
Carbone, Umberto	Panama, Panama.
Caspersen, Bjarne	Dorchester, Mass.
Goddard, Archie Coggeshall	Newport.
Leonard, James Basil	Hingham, Mass.
Wilkins, Joseph Chapman	North Easton, Mass.

Short Course in Engineering.

Arnold, Clifton Rice	Cowesett.
Berrayarza, Mario	Yaguajay, Cuba.
Hayward, Harry Lewis	Holyoke, Mass.
Hoxsie, Harry Bailey	Quonochontaug.
Hulse, Frank Halsey	Cowesett.
Miller, John Wright	Narragansett Pier.
Rayhill, Charles William	Warwick.
Rietzel, Charles Wheelock	Charlestown.
Toolin, Bartholomew James	Cowesett.
Tully, William Henry	Peacedale.
Wilson, Edward Lewis	East Greenwich.

Course in Poultry Keeping.

Blanchard, Albert	Westerly.
Berrayarza, Fernando	Yaguajay, Cuba.
Caspersen, Bjarne	Dorchester, Mass.
Childs, Chesman Oliver	North Sutton, N. H.
Dautun, Alphonse Perron	North Hackensack, N. J.
Goddard, Archie Coggeshall	Newport.
Gonzales, Carl	Kingston.
Grise, Lionel Ambrose	Ware, Mass.
Johnson, Bernard	Roxbury, Mass.
Kent, Melville M.	East Boston, Mass.
Leonard, James Basil	Hingham, Mass.
Price, Edwin Doke	New York, N. Y.
Schutzbank, Israel	Freehold, New Jersey.
Seabury, LeRoy	Newport.
Tuller, Ernest J.	Hartford, Conn.
Wilkins, Joseph Chapman	North Easton, Mass.
Wheelock, George Walker	East Greenwich.
Withers, John Thomas	Jersey City, N. J.
Young, Edwin R.	Providence.

Total number of students (none counted twice) 183

Graduates.*

1894.

NAME AND ADDRESS.	COURSE.	OCCUPATION.
Adams, George Edward Kingston.	Agr.	Chief of Dept. of Agriculture and Professor of Agronomy, R.I.S.C.
Ammonds, George Clarence 5 Boylston Place, Boston, Mass.	Mech.	Railroad Postal Clerk, on N. Y., N. H. & H. R. R. Co.
Arnold, Chapin Trafford 52 Wood St., Providence.	Agr.	Electrical Contractor, Office 26 Custom House St., Providence.
Burlingame, Geo. Washington R. F. D. No. 2, Box 56, North Scituate.	Agr.	Farmer.
Clark, Helen May (Mrs. Wm. F. B. Leavitt), B. L., Smith College, 1899. Essex Fells, New Jersey.		At home.
Knowles, John Franklin Kingston.	Mech.	With Contractor John Bristow, Ashaway.
†Madison, Warren Brown Kingston.	Agr.	Professor of Animal Husbandry, R. I. S. C.
Mathewson, Ernest Hoxsie Ph. B., Brown University, 1896. 1486 Meridian Place, Washington, D. C.	Mech.	Crop Technologist in Tobacco, U. S. Department of Agriculture.
Peckham, Reuben Wallace Melville Station, Newport.	Agr.	Market Gardener.
Rathbun, William Sherman Barnet, Vt.	Agr.	Editor Barnet Record.
Rodman, George Albert New Haven, Conn.	Mech.	Building Dept., Room 24, Union Station, N. Y., N. H. & H. R. R. Co.
Sargent, Charles Lawrence Ph D., University of Pennsylvania, 1900. 9 Thomas St., Newark, New Jersey.	Agr.	Chemist, Murphy Varnish Co.
Slocum, Samuel Watson 130 West Broad St., Westerly.	Agr.	Carpenter.

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*It is earnestly desired that the graduates inform the Alumni Bureau of any permanent change of address.

†Died March 22, 1909.

NAME AND ADDRESS.	COURSE.	OCCUPATION
Spears, John Barden Foster Centre.	Agr.	Farmer.
Sweet, Stephen Adelbert Slocums.	Agr.	Farmer.
Tucker, George Mason Ph. D., Göttingen, 1899. Louisville, Illinois.	Agr.	Farmer.
Wilber, Robert Arthur East Greenwich.	Mech.	Express Agent.
	1895.	
Albro, Lester Franklin Melville Station, Newport.	Agr.	Professional Singer.
Burdick, Howland Kingston.	Agr.	Instructor in Dairying, R. I. S. C.
Clarke, Charles Sherman Jamestown.	Mech.	Marine Engineer.
Eldred, Mabel DeWitt Kingston.		Instructor in Drawing, R. I. S. C.
Hammond, John Edward Jamestown.	Agr.	Farmer.
Oatley, Lincoln Nathan Wakefield.	Mech.	Contractor and Builder.
Scott, Arthur Curtis Ph. D., Univ. of Wisconsin, 1902. Austin, Texas.	Mech.	Professor of Electrical Engineering, Consulting Engineer, Univ. of Texas.
Tefft, Jesse Cottrell Jamestown.	Mech.	Purser, Newport and Jamestown Ferryboat Co.
Winsor, Byron Edgar Coventry.	Mech.	Poultryman.
	1896.	
Brown, May (Mrs. Charles A. White), Narragansett Pier.		At home.
Greenman, Adelaide Maria (Mrs. R. Wallace Peckham) Melville Station, Newport.		At home.
Kenyon, Albert Lewis 35 Chestnut St., South Manchester, Conn.	Mech.	Farmer.
Moore, Nathan Lewis Cass Shannock.	Agr.	Fruit-Grower.
Tabor, Edgar Francis 69 Doyle Ave., Providence.	Mech.	Calico Printer, U. S. Finishing Co., Silver Spring Branch.
*Williams, James Emerson	Agr.	

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*Deceased.

1897.

NAME AND ADDRESS.	COURSE.	OCCUPATION.
CARMICHAEL, WELCOME SANDS Shannock.	Sci.	Bookkeeper, Providence Journal Co., Providence.
CASE, HERBERT EDWARDS BROWN Ph. B., Brown University, 1900. Graduate, Hartford Theological Seminary, 1904.	Mech.	Missionary, Marianas, Island of Guam, U. S. A.
GRINNELL, ARCHIE FRANKLIN 85 Ninth St., Providence.	Mech.	Draughtsman, Brown & Sharpe Mfg. Co.
HANSON, GERTRUDE MAIE Usquepaug.	Sci.	Teacher.
HOXSIE, BESSIE BAILEY (MRS. E. F. RUECKERT) 98 Melrose St., Providence.	Sci.	At home.
KENYON, ALBERT PRENTICE 10 West St., Westerly.	Mech.	Bookkeeper, Maxson & Co., Westerly.
KENYON, CHARLES FRANKLIN Shannock.	Mech.	Stationary Engineer, Boston, Mass.
LARKIN, JESSIE LOUISE 98 Beach St., Westerly.	Sci.	Genealogist.
MARSLAND, LOUIS HERBERT 115 Mark Ave., Syracuse, N. Y.	Mech.	Asst. Engineer, with Syracuse Railroad Construction Co., 500 Onondaga County Savings Bank Bldg.
TEFFT, ELIZA ALICE 16 Rocket St., Westerly.	Sci.	Teacher, East Greenwich.
THOMAS, IRVING 2217 South Darien St., Philadelphia, Pa.	Mech.	Designer of Patterns.

1898.

NAME AND ADDRESS.	COURSE.	OCCUPATION.
ARNOLD, SARAH ESTELLE (MRS. R. O. BROOKS) 191 Franklin St., New York City.	Sci.	At home.
BARBER, GEORGE WASHINGTON East Greenwich.	Agr.	Clerk.
CARGILL, EDNA MARIA (MRS. LESTER H. BROWN) Abbott Run.	Sci.	At home.
CASE, JOHN PETER 26 Courtland St., New York City.	Agr.	With Brown Hoisting Machinery Company.
CLARK, WILLIAM CASE Wakefield.	Sci.	Secretary and Gen. Mgr. Sea-View Railroad Co. and Narragansett Pier Elec. Light and Power Co.; Mgr. Wickford Light and Water Co.

NAME AND ADDRESS.	COURSE.	OCCUPATION.
Congdon, Henry Augustus Kingston.	Mech.	Farmer.
Flagg, Martha Rebecca Hardwick, Mass.	Sci.	At home.
Harley, William Ferguson 62 Hillside Ave., Providence.	Agr.	Salesman, with Messrs. Callender, McAuslan & Troup, Providence.
Turner, Harriette Florence (Mrs. Geo. M. Tucker) Graduate, Drexel Institute, 1900, Louisville, Illinois.	Sci.	At home.
Wilson, Grace Ellen (Mrs. W. F. Harley) 62 Hillside Ave., Providence.	Sci.	At home.

1899.

NAME AND ADDRESS.	COURSE.	OCCUPATION.
Bosworth, Alfred Willson Geneva, N. Y.	Sci.	Associate Chemist, N. Y. Agr. Exp. Sta.
Brooks, Ralph Ordway 191 Franklin St., New York City.	Sci.	Consulting Chemist, Bacteriologist, Microscopist, Food-Inspection Expert.
George, Lillian Mabelle A. B., Univ. Ill., 1904. Kingston.	Sci.	Librarian, R. I. S. C.
Harvey, Mildred Wayne 27 West 93d St., New York City.	Sci.	Private Secretary, National Copper Bank.
Kenyon, Blydon Ellery Austin, Texas.	Agr.	Instructor, School of Electrical Engineering, Univ. of Texas.
Knowles, Carroll 127 Hamilton St., Providence.	Mech.	Tool Designer, Brown & Sharpe Mfg. Co.
Knowles, Harry Ph. B., Brown University, 1906. 37 East Park St., Newark, N. J.	Sci.	Reporter, Newark Sunday Call.
Ladd, Merrill Augustus 304 No. Boulevard, Atlanta, Ga.	Mech.	Commercial Representative for Florida and Georgia, General Electric Co.
Morrison, Clifford Brewster 543 Broad St., Providence.	Sci.	Chemist, City Sewerage Dept.
Owen, William Frazier Schenectady, N. Y.	Mech.	Engineering Dept., General Electric Co.
Payne, Ebenezer M. D., Univ. Michigan, 1904. Great Barrington, Mass.	Sci.	Physician and Surgeon.
Phillips, Walter Clarke Ph. B., Brown University, 1902. A. M., Brown University, 1903. 1104 W. Illinois St., Urbana, Ill.	Mech.	Instructor in English Literature, University of Illinois.

NAME AND ADDRESS.	COURSE.	OCCUPATION.
Reynolds, Robert Spink Room 314, Gen. Office Bldg., New Haven, Conn.	Mech.	Chief Draughtsman, Bridge Dept., N. Y., N. H. & H. R. R. Co.
Rice, Minnie Elizabeth (Mrs. Robert J. Sherman) Lafayette.	Sci.	At home.
Sherman, Abbie Gertrude (Mrs. Benjamin Barton) 56 Pavilion Ave., Providence.	Sci.	At home.
Sherman, George Albert West Kingston.	Mech.	Insurance Agent.
Thompson, Sally Rodman (Mrs. Lewis Balch, Jr.) Wakefield.	Sci.	At home.

1900.

Brightman, Henry Maxson 526 Murray Bldg., Grand Rapids, Mich.	Mech.	Consulting Engineer.
Cross, Charles Clark 814 So. 19th St., Newcastle, Ind.	Mech.	Chief Inspector, Maxwell-Briscoe Motor Co.
Eldred, John Raleigh Kingston.	Mech.	Instructor in Mechanical Engineering, R. I. S. C.
Fison, Gertrude Sarah 782 Lincoln Place, Brooklyn, N. Y.	Sci.	Children's Librarian, Brooklyn Public Library, Albany Heights Branch, Brooklyn.
Fry, John Joseph A. B., Oberlin, 1904. Glenbrook, Conn.	Mech.	
Goddard, Edith (Mrs. Lawrence B. Reed) 10 North St., Plymouth, Mass.	Sci.	At home.
Kenyon, Amos Langworthy Newburgh, N. Y.	Agr.	Dairyman, Brookside Farm.
Munro, Arthur Earle Ph. B., Brown University, 1902. 41 George St., Providence.	Sci.	Attorney-at-Law, 49 Westminster St.
Soule, Ralph Nelson East Greenwich.	Sci.	
Steere, Anthony Enoch Fort Hunter, N. Y.	Mech.	Assistant Civil Engineer, New York State Barge Canal.
Stillman, Lenora Estelle 1229 Gates Ave., Brooklyn, N. Y.	Sci.	Teacher.
Tucker, Bertha Douglass R. F. D. No. 2, Box 105, Swansea, Mass.	Sci.	Dressmaker

NAME AND ADDRESS.	COURSE.	OCCUPATION.
WHEELER, CHARLES NOYES . . 97 Garden St., Pawtucket.	Sci.	Clerk, Wm. H. Haskell Manufacturing Co.
WILSON, JOSEPH ROBERT . . . Belleville.	Mech.	In Woolen Mills, J. P. Campbell.

1901.

NAME AND ADDRESS.	COURSE.	OCCUPATION.
BRAYTON, CHARLES ANDREW . . Fiskeville.	Agr.	Farmer.
BRIGGS, NELLIE ALBERTINE . . Providence.	Sci.	Stenographer, R. I. Hospital Trust Co.
BURGESS, CHARLES STUART . . . 264 Sayles St., Providence.	Mech.	Draughtsman, Brown & Sharpe Mfg. Co.
CLARNER, LOUIS GEORGE KARL, JR. Arnold's Mills.	Sci.	Farmer.
DAWLEY, EDNA ETHEL . . . . Kenyon.	Sci.	Traveling for F. E. Compton & Co.
DENICO, ARTHUR ALBERTUS . . 15 Dey St., New York City.	Sci.	With American Telephone and Telegraph Co., Traffic Dept.
*JAMES, RUTH HORTENSE (MRS. HERBERT E. ROUSE) . . .	Sci.	
SHERMAN, ANNA BROWN . . . . Kingston.	Sci.	Advertising.
SHERMAN, ELIZABETH AGNES . . 41 Milk St., Boston, Mass.	Sci.	Stenographer, with Whitehall Portland Cement Co.
SMITH, HOWARD DEXTER . . . A. M., Brown University, 1904. Ph. D., Tufts College, 1906. 839 Church St., Beloit, Wisconsin.	Sci.	Instructor in Chemistry, Beloit College.
STEERE, ROENA HOXSIE . . . 98 Fifield St., Providence.	Sci.	Stenographer, with Anthony & Cowell Co.
WILBY, JOHN . . . . Flat River, Missouri.	Sci.	Supply Clerk, Central Lead Co

1902.

NAME AND ADDRESS.	COURSE.	OCCUPATION.
CLARKE, LATHAM . . . . . A. M., Brown University, 1903. Ph. D., Harvard University, 1905. Boylston Hall, Cambridge, Mass.	Chem.	Instructor in Chemistry, Harvard University.
FERRY, OLIVER NEEDHAM . . . 8 Armington Ave., Providence.	Mech.	With Providence Engineering Co.
MAXSON, RALPH NELSON . . . Ph. D., Yale University, 1905. 366 Transylvania Park, Lexington, Ky.	Chem.	Professor of Inorganic Chemistry, State University.
PITKIN, ROBERT WILLIAM . . . Rockville, Conn., R. F. D. No. 1.	Mech.	Farmer.

---

*Deceased.

1903.

NAME AND ADDRESS.	COURSE.	OCCUPATION.
BARBER, KATE GRACE Ph. D., Yale University, 1906. Washington, D. C.	Gen. Sci.	Micro-analyst, Bureau of Chemistry, U. S. Department of Agriculture.
CONANT, WALTER AIKEN Care Sidney A. Wilbour, 35 Congress St., Boston, Mass.	Agr.	Dairying, Tryon, Polk Co., North Carolina.
GODDARD, WARREN, JR. Graduate New Church Theological School, 1907. 194 June St., Fall River, Mass.	Mech.	Minister, New Jerusalem Church.
KEEFER, EDITH CECILIA 13 Poplar St., Providence.	Biol.	Student, R. I. S. C.
KENT, RAYMOND WARREN A. M., Harvard University, 1904. Akron, Ohio.	Chem.	Chemist, Diamond Rubber Co.
TEFFT, ERNEST ALLEN Broadway, Providence.	El. Eng.	With Amer. Locomotive Works.

1904.

BALLOU, WILLARD ALGER Brooklyn, N. Y.	Biol.	Instructor in Mathematics, Pratt Institute.
QUINN, MARY LOUISE No. 12, "The Ringsdorf," Green Bay, Wis.	Biol.	Teacher of Botany and Physiology, East High School.
RODMAN, WALTER SHELDON M. S., R. I. C. A. & M. A., 1907, 12½ St. James Ave., Boston, Mass.	El. Eng.	Instructor in Physics and Electrical Engineering, R. I. S. C. (On leave. Graduate Student, Mass. Institute of Technology.)

1905.

CHAMPLIN, SARAH ELIZABETH 30 Portland St., Providence.	Gen. Sci.	Bookkeeper, Burt Mfg. Co., 226 Eddy St.
DOW, VICTOR WELLS Southbridge, Mass.	High. Eng.	Traveling Representative of Barrett Mfg. Co.
GILMAN, JEAN Hampton, Va.	High. Eng.	Assistant to Director of Trade School, Hampton Institute.
HARRALL, NELLIE ARMSTRONG Wakefield.	Gen. Sci.	Student, Normal School of Physical Training, Cambridge, Mass.

1906.

NAME AND ADDRESS.	COURSE.	OCCUPATION.
Arnold, Benjamin Howard 32 Vine St., Lynn, Mass.	El. Eng.	With General Electric Co
Berry, Wallace Noyes Interlachen, Fla.	El. Eng.	
Elkins, Marion Graham 10 Moody St., Amesbury, Mass.	Gen. Sci.	Graduate student, Yale University, 119 Park St., New Haven, Conn.
Harding, Lee LaPlace Lyme, Conn.	High. Eng.	Graduate student, Yale Univsity, 78 Lake Place, New Haven, Conn.
Keyes, Frederick George Sc. M., Brown Univ., 1907. 33 Hope College, Brown Univ., Providence.	Chem.	Graduate student, Brown University, and Instructor in Chemistry.
Nichols, Howard Martin 26 Congress St., Lynn, Mass.	El. Eng.	In Engineering Dept., General Electric Co.
Sisson, Cora Edna Wickford.	Gen Sci.	Teacher.
Wilkinson, Albert Edmund The Outlook, Burlington, Mass.	Agr.	Farm Superintendent.

1907.

NAME AND ADDRESS.	COURSE.	OCCUPATION.
Barber, Arthur Houghton East Greenwich.	Mech. Eng.	Student, Cornell University, Ithaca, New York.
Coggins, Calvin Lester Sharon, Mass.	El. Eng.	Graduate Student, Wilder Laboratory, Dartmouth College, Hanover, N. H.
Ferry, Jay Russell 129 Cottage St., Everett, Mass.	High. Eng.	Draughtsman, with N. E. Structural Co.
Kellogg, David Raymond 176 W. Ninth Ave., Columbus, O.	Chem.	Assistant, Physics Dept., Ohio State University.
Kendrick, Winfield Smith 32 Vine St., Lynn, Mass.	El. Eng.	With General Electric Co.
Lamond, John Kenyon Usquepaug.	El. Eng.	Graduate student, Yale University, 103 Park St., New Haven, Conn.
Lewis, Harry Reynolds Woodbine, New Jersey.	Agr.	Asst. Prof. Agriculture and Animal Husbandry, Baron de Hirsch Agricultural School.
Macomber, Miner Sanford 78 Lake Place, New Haven, Conn.	Chem.	Graduate student in Physiol. Chemistry, Yale University.
Tucker, Ethel Aldrich Kingston.	Gen. Sci.	Student in Kindergarten Course, R. I. State Normal School.

THE VILLAGE STREET.

1908.

NAME AND ADDRESS.	COURSE.	OCCUPATION.
Drew, Joseph Drake 17 Old St., Brockton, Mass.	Chem.	Teacher, Rochester High School, N. H.
Field, Clesson Herbert 20 W. 4th St., So. Bethlehem, Pa.	Civ. Eng.	Graduate C. E. student, Lehigh University.
Fiske, Herbert Andrew 102 Superior St., Providence.	El. Eng.	Teacher Bristol High School.
Gardiner, Robert Franklin Wakefield.	Chem.	
Gory, Edward Allen 138 South Common St., Lynn, Mass.	El. Eng.	With General Electric Co.
Kenyon, Susan Elnora (Mrs. Fred K. Crandall) Westerly.	Biol.	At home.
Mitchell, Clovis William 248 Montauk Ave., New London, Conn.	Civ. Eng.	Teacher, Mathematics and Science, Manual Training High School.
Rose, Orpha Lillie Peace Dale, R. F. D.	Gen. Sci.	Teacher, Kingston Gram. School.
Sheldon, George Ware 12½ St. James Ave., Boston.	El. Eng.	Student, Mass. Institute of Technology.
Sherman, Mary Albro La Grange, Me.	Agr.	Teacher.
Smith, John Lebroc Narragansett Pier.	El. Eng.	Teacher, St. Andrews Episcopal School, Barrington.
Whipple, Lucius Albert Greenville.	Civ. Eng.	Teacher, Mathematics and Physical Science, The Abbott School, Farmington, Me.

INDEX.

PAGE.

- Admission....23
  - certificate....24, 25
  - college....23
  - conditions....25
  - examinations....24, 25
  - poultry-keeping course....23
  - requirements....23
  - short courses....22
  - Sub-Freshman classes....25
- Agricultural experiment station....14
  - establishment....13
  - publications....9
  - staff....9
- Agricultural club....74
- Agriculture....39
  - college course....34–37
  - extension work....15
  - short course....22, 38
- Agronomy....40
- Alumni—
  - association....75
  - list....81–89
- Animal husbandry....41
- Athletics—
  - association....74
  - tax....28
- Battalion organization....69
- Biology—
  - animal....72
  - plant....45
- Board of managers....3
- Boarding expenses....27
- Botany....45
- Bulletins of experiment station....14
- Calendar....11
- Certificate—
  - admission by....24, 25
  - teachers'....26
  - courses leading to....38

PAGE.

- Chemical engineering....18, 34–37, 46
- Chemistry....46
- Church attendance....31
- Civil engineering....18, 34–37, 62
- College—
  - foundation....13
  - location....33
  - object....14
- Courses of study....17
  - agriculture....18, 34–37, 39
  - applied science....19, 34–37
  - certificates....23
  - degrees....26
  - engineering....18, 34–37
  - home economics....19, 34–37, 51
  - poultry keeping....23
  - short courses....22, 38
  - Sub-Freshman....25
- Damage fund....29
- Degrees....26
- Departments of instruction....39–73
- Deposit....27
- Diploma, fee....28
- Domestic science....38 54
- Dormitories....27, 29
- Drawing—
  - architectural....51
  - freehand....50
  - mechanical....57
- Drill, military....68
- Economics....51
  - agricultural....51
  - home....51
- Education....54
- Electrical engineering....18, 34–37, 60
- Employment for students....29
- Engineering....18, 34–37
  - chemical....18, 34–37, 46
  - civil....18, 34–37, 62

PAGE.
Engineering—*Continued*
  electrical...18, 34–37, 60
  mechanical...18, 34–37, 55
  society...74
English...66
Entomology...73
Examinations—
  dates...11
  entrance...24–25
Expenses...27
Experiment station—
  bulletins...14
  staff...9
Extension work...15
Faculty and other officers...5
Fees...27
Forestry...46
French...67
Furniture...28
Geology...64
German...66
Government...65
Graduates, list...81–89
Greenhouses...44
  management...44
History...65
Holidays...11
Home economics...51
Horticulture...44
Laboratory fees...27
Landscape gardening...45
Languages...65
Lecture association, college...32
Lecturers—
  poultry course...8
  college association...32
Library...32
Location...33
Mathematics...67
Mechanical engineering...18, 34–37, 55
Military science and tactics...68
  battalion organization...69
  requirements...68
  uniform...28
Mineralogy...64

PAGE.
Nature guard...16
Oral expression...66
Organizations...74
  agricultural club...74
  alumni association...75
  athletic association...74
  engineering society...74
  science club...74
  Y. M. C. A...74
  Y. W. C. U...74
Physics...70
Physiology...73
Political economy...51
Poultry keeping—
  course...23, 43
  students...80
Prize, Kingston...32
Psychology...72
Reading-room...32
Registration...11
Religious influences...31
  organizations...74
Rhetoric...66
Rooms in village...29
Science club...74
Social science...51
Sociology, rural...51
Store, college...29
Students—
  boarding...28
  list...76–80
  number...80
  Sub-Freshman classes...25
Thesis...37
Transportation...28
Tuition...27
Uniform...28
Women, expenses...27
  opportunities for...27
Work, for students...29
Worship, public...31
Y. M. C. A...31, 74
Y. W. C. U...31, 74
Zoölogy...72